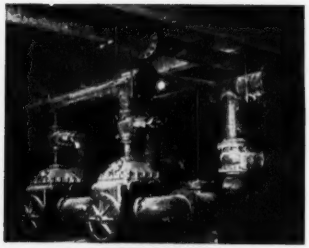
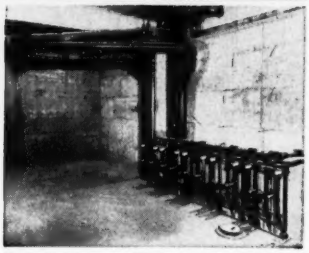
ENGINEERING NEWS-RECORD

A McGRAW-HILL PUBLICATION

In STATLER CENTER

Byers Wrought Iron Pipe safeguards 13 vital services





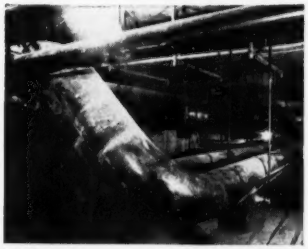
STATLER CENTER
Los Angeles, California

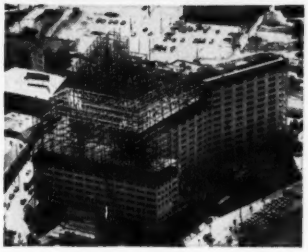
HOLABIRD & ROOT & BURGEE
Architects and Engineers, Chicago, Ill.

WILLIAM B. TABLER
Associate Architect, New York, N.Y.

MEHRING & HANSON
Mechanical Contractor, Los Angeles, Calif.

ROBERT E. McKEE
General Contractor, Los Angeles, Calif.





The selective use of Byers Wrought Iron pipe in the new Statler Center, Los Angeles, owned and operated by Hotels Statler Company, Inc., New York, amply supports the careful planning that was given to maintenance control in this ultra-modern structure. Over 215 tons of this time-tested material was installed for steam returns, brine lines, chilled water lines 4" and larger, blow-down discharge lines, soil, waste and vents above ground, hot, cold and ice water piping 4" and larger, vacuum cleaning system, soap dispensing system and the air conditioning system.

Every one of these services carry a corrosive threat . . . and every one represents a time-tried genuine wrought iron application. The material's proved ability to last longer, at lower cost per year, is providing an increasing number of leading engineers with a reliable guide to material selection in today's modern building.

The unique structure and composition of Byers Wrought Iron provides the needed service qualities for these punishing applications. Tiny fibers of glass-like silicate slag, threaded through the body of high-purity iron, halt and "detour" corrosive attack. They also help anchor the initial protective scale which shields the underlying metal.

You'll find specific information in our bulletin, WROUGHT IRON FOR PIPING SYSTEMS. Write for your copy.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. Export Division: New York, N.Y.

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

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FIRST long-center underground conveyor in South Africa, this conveyor belt hauls diamond-bearing clay 1,530 feet below the surface of the ground.

Designed by the G.T.M.—Goodyear Technical Man—this belt has proved *so satisfactory since its installation in 1948 that mine management decided to replace other steel-rope haulage systems with conveyor belts!*

Thanks to the results experienced with the G.T.M.-designed belt, operators of the mine now specify Goodyear belting 100% for all conveyors, above ground and below.

Reasons for this decision are:

Elimination of frequent derailments, high accident rate and constant breakdowns experienced with rope-and-cart haulage

Saving of 800 man-hours per day over previous system

Appreciably reduced cost-per-ton-handled

LOOK FOR YOUR GOODYEAR INDUSTRIAL RUBBER PRODUCTS DISTRIBUTOR *in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods." He handles Hose, Flat Belts, V-Belts, Molded Goods, Packing, Tank Lining, Rubber-Covered Rolls, built to the world's highest standard of quality.*

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ENGINEERING NEWS-RECORD

Member ABP Member ABC

Volume 149 September 25, 1952 No. 13

WALDO G. BOWMAN
Editor

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We never get tired of telling you

A lot of people have said to us, "Don't you get tired of running those ads with numbers in them, telling about repeat orders, year after year"? Remember this; Advertising can talk superiority but a repeat order proves it. There is no better endorsement of the performance of a piece of equipment. Remember, too, there are a lot of manufacturers that can't do this *month after month and year after year!*

A repeat order tells you better than all the type we could use that what we claim is *so.* It proves that Northwest equipment is *profitable* equipment to own and the fact that we have been able to run this type of advertising for years proves that Northwest has *maintained quality and more than kept abreast of conditions.* That, too, is why one out of every three Northwests sold is a repeat order.

NORTHWEST ENGINEERING COMPANY
1502 Field Bldg., 135 South LaSalle St., Chicago 3, Ill.

NORTHWEST

SHOVELS • CRANES • DRAGLINES • PULLSHOVELS

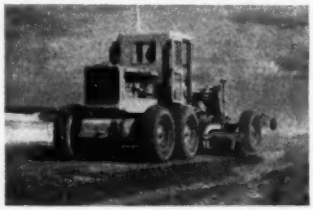
Cecil Field "Beefed up" for Jets

BIG YELLOW TASK FORCE HELPS CONSTRUCT NEW 9,400-FOOT RUNWAYS ON THE DOUBLE

A Navy pilot returning to Cecil Field after a year's absence would notice quite a change in the layout of his old Florida base. He'd see two new runways, constructed to accommodate present and future jet airplanes. Each runway is 9,400 feet long and 200 feet wide, and land is cleared 750 feet from their center lines and ends to provide a 50-1 glide angle.

This pair of runways marks the start of an expansion program to make Cecil Field a master jet field. For the initial 1,500,000-yard earthmoving project, contractor L. G. Defelice & Son, Inc., assembled a task force consisting mainly of "Caterpillar" units. Strategic use of these big yellow machines – tractors, wagons, scrapers, 'dozers and motor graders – helped speed construction in difficult terrain. Ten big new 275-HP DW20 Tractors with No. 20 Wagons bore the brunt of the work.

Sticky sand is being gobbled into the jaws of this "Cat" No. 80 Scraper, push-loaded by a D8 and No. 8S 'Dozer. Ejection of heaped sand was speeded by the No. 80's high apron lift.



Good haul roads are the responsibility of this "Cat" No. 12 Motor Grader, one of several No. 12s on this job. More than 9 out of 10 "Cat" Motor Graders ever built are still in use.

In spite of very tough going in sticky sand, the DW20 teams came through with outstanding performance. Here are some typical figures from this job. After being loaded by a belt conveyor loader, the DW20 units barreled off with average loads of 23 cubic yards each. On a 4,500-foot to 5,000-foot round-trip haul, each averaged 6 trips every hour per 10-hour day. "These units far exceeded our expectations," said Project Manager Fred Sebastian. "They can't be beat for power, speed and efficiency."

"Caterpillar" equipment used on other phases of the operation included D8s and No. 80 Scrapers on leveling work, No. 12 Motor Graders maintaining haul roads, a D8 pulling a compactor and other D8s and 'Dozers leveling fill dirt. Successful contractors find that this assignment of heavy-duty tools to the zones for which they're best fitted results in higher production at lower cost. They also observe that standardization on the big yellow line pays off other ways. One is the fact that maintenance problems are centered in the capable hands of the nearby "Caterpillar" Dealer. He's a convenient source of service or information at all times!

Zooming across sand on big rubber tires, two "Cat" DW20s with No. 20 Wagons pass on a 4,500-foot to 5,000-foot round-trip haul. Each unit averages 6 trips per hour with an average load of 23 cubic yards.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

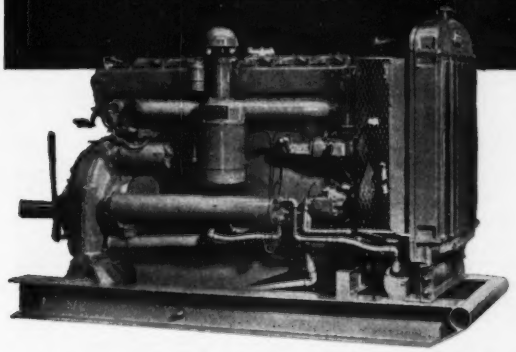
MURPHY DIESEL...

gives you easier starting . . .

more economy . . . smoother

operation . . . better response

***because it has* UNIT FUEL INJECTION**



Murphy Diesel Generator Set, owned by Lehigh Construction Co., Inc., used to power a series of electric welders being used in steel construction.

The performance of a diesel engine can be no better than the accuracy of control of fuel injection. That's why we say the unit injector is the heart of the Murphy Diesel. This simple, self-contained unit is both pump and nozzle. There are no high pressure fuel lines to interfere with smooth, accurate, precisely controlled fuel injection and rob you of power and fuel. In the Murphy Diesel, solid fuel completely atomized as a fine fog is injected directly into all parts of a plain, open combustion chamber. Ignition is accomplished solely by the heat of compression of the air within the cylinder. The precisely controlled rate of injection determines the speed and pressure of combustion, hence the power delivered and the amount of fuel used.

Translated into benefits for the user, Murphy Unit Fuel Injection makes possible greater power output with less fuel—better all around performance. Full details are given in the booklet *"10 Questions to Ask a Diesel Engine Salesman"*. Ask your Murphy Diesel Dealer for a copy or write direct.

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MURPHY DIESEL

213

Heavy duty power

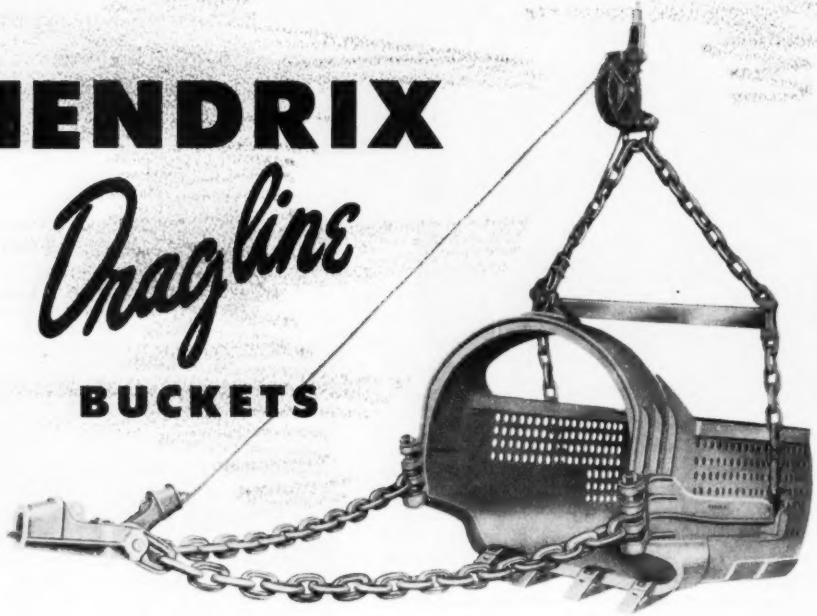
for construction

Murphy Diesel Engines and Power Units for construction, 90 to 226 H.P., 1200 and 1400 RPM. Generator Sets, 60 to 140 K.W.

When it's production that counts

you can rely on...

HENDRIX *Dragline* BUCKETS



3 TYPES
FOR
EVERY DIGGING PURPOSE
⅜ to 40 Cu. Yds.

A full bucket every time . . . and the minimum of maintenance cost, both in dollars spent and time consumed, will result in more profitable production for you. Dragline operators are becoming more and more enthusiastic over the rugged construction, full payloads, and low upkeep of Hendrix Dragline Buckets. They're engineered by men with "know-how" to give you BIGGER PAYLOADS AT LOWER COST. Ask the man who uses one . . . he knows!

Hendrix Buckets May Be Special Ordered Without Perforations

HENDRIX *Lightweight* **DRAGLINE BUCKETS**

HENDRIX MANUFACTURING CO., INC.

MANSFIELD – LOUISIANA

Monsanto Penta helps carry the load

Knoxville Power Company has given Monsanto Penta (pentachlorophenol) a tough assignment at its Alcoa, Tennessee, plant. It's the job of protecting a wooden flume that carries 2,000,000 gallons of water a day. The flume usually is in service around the clock.

The previous flume, not penta protected, had to be replaced after nine years because of decay. The company hopes to get 18 to 20 years of service from the penta-protected structure, bringing a substantial saving in maintenance.

Monsanto Penta is a stable chemical, developed for wood preservation. It stops decay. It protects against termites and other wood-boring insects. Monsanto Penta does not leach. Rain and ground water do not wash it away. It can be applied so wood can be painted, waxed or varnished.

For information on the use of penta, for names of suppliers of penta-protected wood or for brands of wood preservatives formulated with Monsanto Penta, contact the nearest Monsanto Sales Office or MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 S. Second St., St. Louis 4, Mo.

☆ ☆ ☆ ☆

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PENTA

MONSANTO
CHEMICALS – PLASTICS

SERVING INDUSTRY... WHICH SERVES MANKIND

*Overcured Sections — present every 30′ to 40′ in all belts made by the flat press method. Only Rotocuring (continuous, non-stop curing) eliminates this major cause of belt failures.

—BWH ROTOCURE prevents these fatalities — look for it in the belts you buy

Press overlaps, inherent in belts cured by flat press methods, are a primary cause of early belt failure. The overlaps result in overcured segments 2″ to 4″ wide across the entire belt because vulcanization is *not* continuous. These 2″ to 4″ segments are *double cured* — and *double curing weakens the structure!*

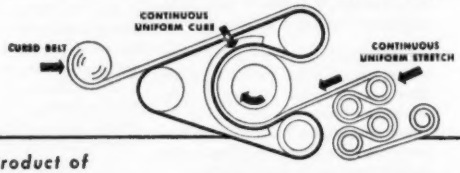
When you buy a BWH conveyor belt made by the *continuous* ROTOCURE process of vulcanization you obtain a *uniformly strong* belt *overall.* The weakened segments due to overlapping that sabotage operations and inflate belting costs are completely eliminated. With continuous, endless vulcanization you'll be ahead four ways:

1. In increased belt flex life — as much as 40%
2. In elimination of mechanical distortion at the press ends
3. In constant, uniform stretch
4. In uniform, abrasion-resistant covers

These characteristics of BWH Conveyor Belts mean minimum belt maintenance costs, longer belt life and appreciable per ton savings in the cost of what you convey! Ask your BWH distributor to show you how these highly serviceable belts can help you. Or write us direct.**

**Ask him also about BWH Rotocured Transmission Belts. Because they permit operation at lower tensions, you are assured of longest possible belt life.

DIAGRAMMATIC SKETCH OF EXCLUSIVE ROTOCURE PROCESS



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Distributors in all Principal Cities

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WAREHOUSE STOCK, 111 NORTH CANAL ST., CHICAGO, ILLINOIS

completed ...another bridge on RAYMOND piles

Constructed for State of California Department of Public Works, Division of Highways.

spanning the South Channel Sweetwater River between National City and Chula Vista, California is this 332-foot long highway bridge supported by Raymond piles. It has a 28-foot wide roadway and is of reinforced concrete construction with concrete caps resting directly on the Raymond piles—another example of the important role Raymond is playing in the constant development of the highways of America.

THE SCOPE OF RAYMOND'S ACTIVITIES . . .

Foundation Construction . . . Harbor and Waterfront Improvements . . . Soil Investigations . . . In-Place Pipe Lining . . . Specialized Construction

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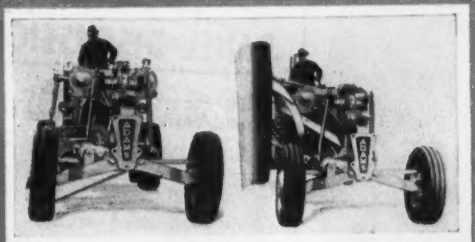
CONCRETE PILE CO.
140 Cedar Street • New York 6, N. Y.

Branch Offices in the Principal Cities of United States and Central and South America.

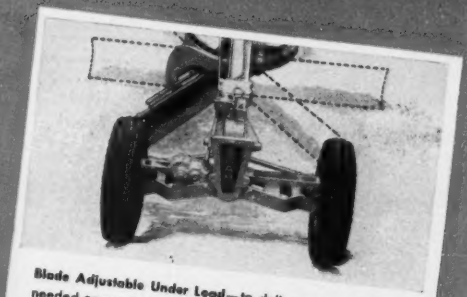
SPIDER WEB OF STEEL—This interesting worm's-eye photograph shows the steel framework for the dome section of a new three-story building for the Ford Motor Co. The new structure, a carefully planned engineering building, is nearing completion at Dearborn, Mich. The large dome is one story in height. It has a diameter of approximately 100 ft. This portion of the building is to be faced with brick, with aluminum sash and trim. Used in the steel framework for the dome, and also for its companion structure, were some 250 tons of Bethlehem Structural Shapes.

Owner: Ford Motor Co., Detroit • *Architects and Engineers:* Voorhees, Walker, Foley and Smith, New York
Contractors: Bryant and Detwiler, Detroit • *Steel Fabricator and Erector:* Whitehead & Kales Company, Detroit

BETHLEHEM STEEL

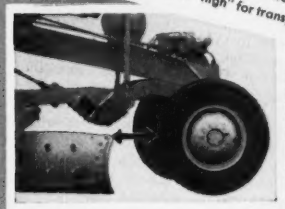


Ditch Cuts to Bank Cuts—or vice versa—in less than a minute—without mechanical adjustments. Saves time on alternate cuts.



Blade Adjustable Under Load—to deliver material where needed on grade balancing work while grader is in motion.

8 Forward Speeds—2 more speeds than most graders—an extra working speed and a higher "high" for transport.



Plenty of Blade Clearance — at tires and all other points. Operator gets all blade positions quickly, easily.

Big, Comfortable Cab—plenty of headroom for a tall man to stand and to see all his work—2-way adjustable seat.

Only ADAMS

Gives you all of these big operating advantages

Yes, in Adams Motor Graders you get all of these important advantages—and many more . . . advantages that help your operator to do high-speed, precision work—at lowest cost.

Adams Motor Graders are powerful and husky, too—built with big reserves of strength and stamina for long-life dependability and low-cost maintenance.

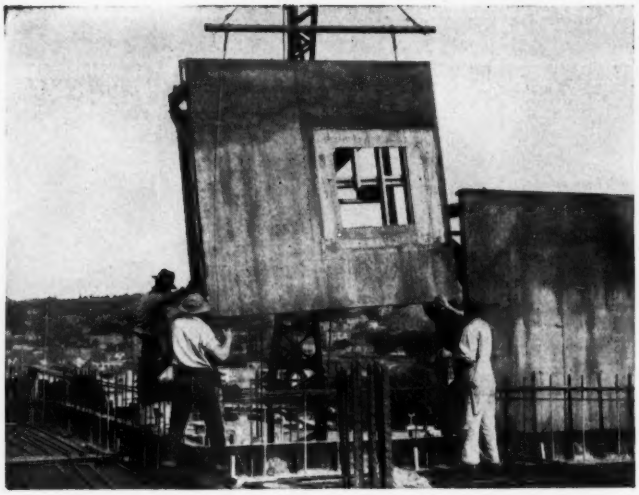
Let your local dealer show you how Adams Motor Graders pay extra dividends the whole year around.

J. D. ADAMS MANUFACTURING CO.
Indianapolis, Indiana

Make your next motor grader an

ADAMS

(ADVERTISEMENT)



When Re-Use Counts–Specify Plywood Forms

MEASURED in terms of cost per use, Douglas fir plywood* ranks as one of the most economical of all form materials. On apartments, office or factory buildings, plywood form sections can be used to job completion—eliminating the expense of rebuilding forms once the job is under way. Plywood deserves ordinary care in handling, but it does *not* require extreme caution at every step and is far more rugged than other panel type materials. The exact number of re-uses obtained vary with grade and the care it receives on the job. Builders report up to 10 to 15 re-uses with *Interior-type PlyForm* . . . twice as many with *Exterior-type PlyForm* and new overlaid plywood panels. See grade data below.

Only Plywood Offers All These Advantages

- Plywood forms create smooth, fin-free surfaces
- Economical! Plywood forms can be used over and over
- Plywood forms speed work—save time and labor
- Plywood is strong, rigid—yet light, easy to handle
- Plywood forms are puncture-proof, water and mortar tight
- Plywood has superior nail and tie holding properties
- Plywood is easy to work with hand or power tools
- Plywood provides sheathing and lining in one material

Douglas Fir

Plywood

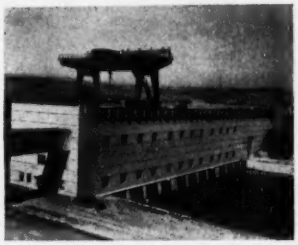
AMERICA'S BUSIEST BUILDING MATERIAL

*Several plywood grades are manufactured for concrete form work. *Interior Plyform*® is made with highly moisture-resistant glues which permit multiple re-use (up to 10 to 15 are not unusual). For maximum re-use specify *Exterior-type PlyForm*®, bonded with completely waterproof adhesives. For special architectural concrete, use Exterior or Interior plywood grades with "A" face veneer—or one of the new plastic surfaced or hardboard-faced plywood panels.

® Registered grade-trademarks of Douglas Fir Plywood Association

PANEL DISCUSSION

Plywood Concrete Forms Speed Work On Rush Job

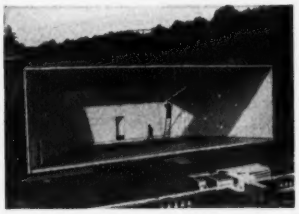


Plywood concrete form panels were credited with helping speed formwork time by up to 20 per cent in building the new Tracy Pumping Plant which furnishes the heartbeat of the giant California Central Valley irrigation project.

According to Fred L. Weiss, construction engineer on the job for Stolte Co., contractor responsible for all concrete work, speed was particularly important on the job because of a penalty clause in the contract. He credits plywood with speeding form construction and application time and costs by 15 to 20 per cent.

Interior PlyForm was specified by Bureau of Reclamation engineers for form work on the plant. Built-up plywood form sections, 20 to 40 feet long, were re-used an average of five times on the walls. Interior PlyForm was also used to form floor slabs as well as water inlet channels beneath the plant.

Exterior Plywood Builds Demountable Band Shell



The problem was to design a symphonic band shell for the University of Virginia that would be, as nearly as possible, acoustically perfect, light and easily erected, yet amply strong and rigid. To meet these requirements, Architect Floyd E. Johnson, Charlottesville, Va., chose Exterior fir plywood framed with fir lumber and light steel bow string trusses.

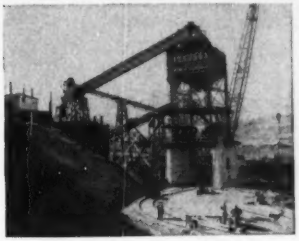
Floor of the structure is ¾" Exterior plywood, supported by 2x10 joists over large oak timbers. Wall sections are of ¼" plywood framed on all four sides by 2x4s. Roof panels are ¼" plywood secured to 2x6 framing members. Wall and ceiling panels are bolted together. Self-opening plywood blow panels, 4'x4', relieve air pressure. Acoustical qualities of the shell have been favorably commented upon by performers and audience alike.

(ADVERTISEMENT)

Plywood Girder Built For Half The Cost Of Steel Truss

Once believed suitable for spans up to only about 60 feet, plywood girders considerably longer are now being used successfully. One of the longest plywood girders currently in use is at the Chief Joseph dam powerhouse in Western Washington. The plywood girder on this job is used to support conveyor belts which carry aggregate to blending bins. It is 120 feet long, with a 90-foot center span and cantilevered ends.

According to Murray Johnson, plant design engineer for Columbia River Constructors, an affiliate of Morrison-Knudson Co., Inc., plywood girders not only cost less than steel trusses, but are far easier to handle and hoist into position.

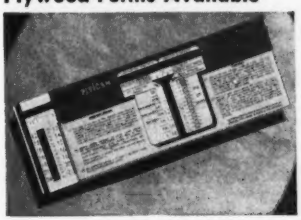


Johnson estimates that including material and labor, the plywood girder cost only about half as much as a steel truss for the same job. They can be easily salvaged for re-use simply by cutting them in half for hauling and splicing as needed.

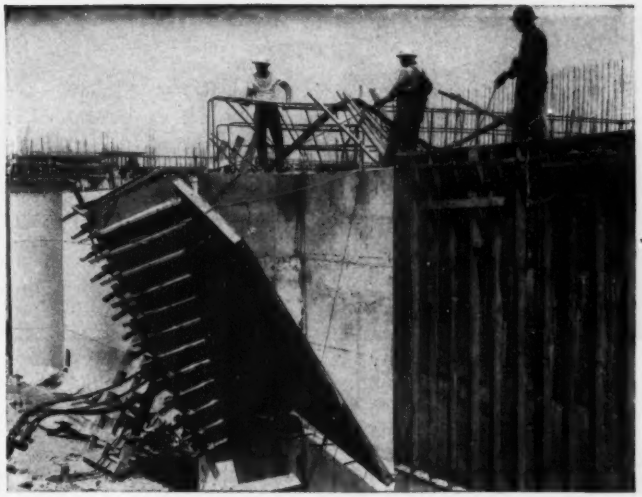
The girder on the Chief Joseph job is on the upper run of an incline going up to the hopper. It consists of two I-beams spaced 3′ 3″ apart. It carries a 30″ wide rubber belt on the top flange, together with steel rollers shaped to form a trough to hold the gravel. Exterior plywood, 1″ thick, forms the 4′ web of the girder, with 2x6s bolted and glued on either side of the plywood to form the flanges. Plywood splice plates on both sides do double duty as web stiffeners.

For information about plywood for low cost beams and girders, write Douglas Fir Plywood Association, Tacoma 2, Wash.

Slide Rule Calculator For Plywood Forms Available



A handy new slide rule calculator which gives construction data for plywood forms is available for $1.00 from Douglas Fir Plywood Association, Tacoma 2, Washington. Included with the new calculator is the leaflet "Design Assumptions for the New Keely Calculator."



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FILLED ANCHOR SLOT showing filler partly removed.

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Ordinary dovetail slot often narrows at the throat when concrete is poured, making it difficult or impossible to insert the dovetail anchor. This narrowing is caused by the arching of the back of the slot, due to the concrete pressure on the sides. With Superior improved dovetail Anchor Slots, the cross ribs prevent the arching action, while the longitudinal ribs keep the slot straight and rigid. A comparison of dovetail Anchor Slots with and without ribs shows an astonishing difference in rigidity and strength.

Filled Anchor Slot is available where seepage into the slot is a problem. Rope-like filler is easily pulled out leaving clean slot for installation of anchors. Eliminates tedious and expensive job of removing hardened grout.

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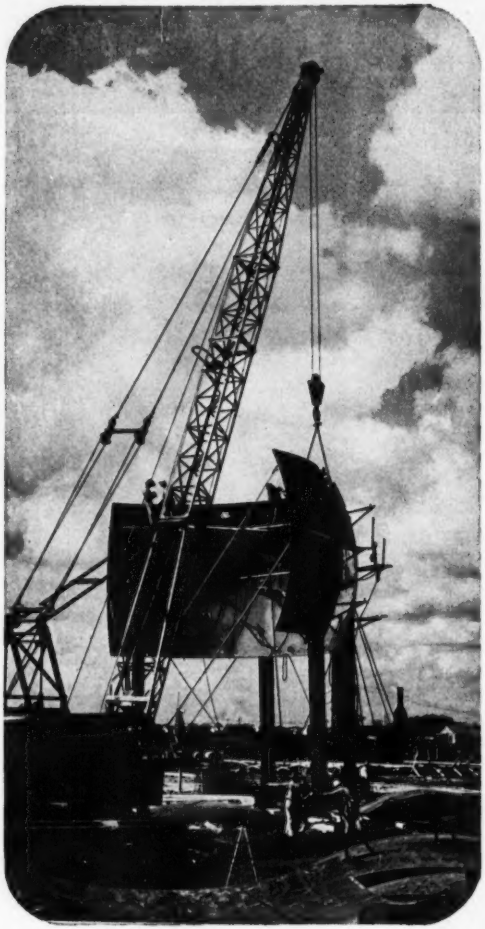

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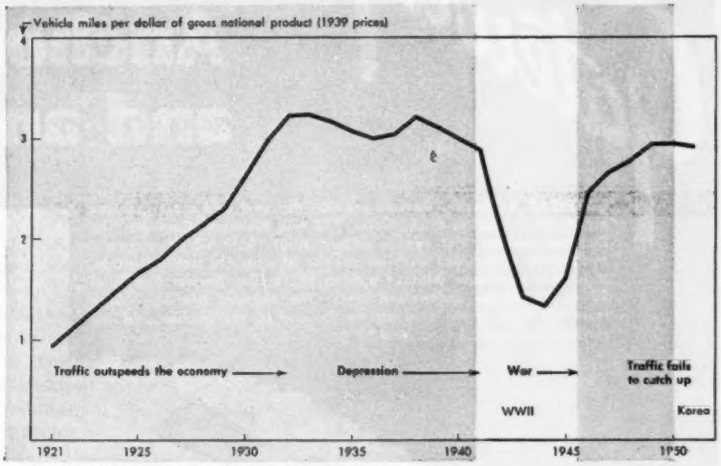
Growth in highway traffic falls behind growth in national economy



Source: McGraw-Hill Dept. of Economics, Dept. of Commerce and Bureau of Public Roads data.

Everyone knows that U.S. highways are crowded—so crowded that people drive their automobiles much less than they would if roads were adequate. But the extent to which our inadequate road network has kept highway traffic from growing is not generally realized.

Conventional statistics on vehicle miles traveled each year obscure this effect. Traffic has increased almost every year except for war years. But the key trend shows up when figures on vehicle miles are compared with figures on the economy as a whole.

The chart shows the trend in vehicle miles traveled per dollar of gross national product in constant prices—which measures general economic activity. It shows that traffic increased much faster than general business in the 'Twenties; in fact, traffic almost quadrupled from 1921 to 1930, while gross national product increased by only 42%.

But the chart also shows that traffic stopped growing faster than the economy in the early 'Thirties, that the ratio of traffic to general business has not even recovered from the wartime slump, and that the ratio has leveled off since 1949.

• **Why?**—One reason for the slowdown in traffic growth is that the number of automobiles is not growing as fast as it did in the 'Twenties. Today there are about as many cars as there are households; in 1920, there were only 33 cars for every 100 households. So travel can't get the automatic boost from the addition of new cars that it got twenty or thirty years ago.

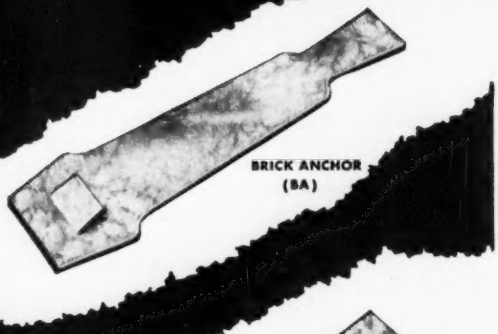
But this fact does not account for all of the remarkable shift that shows on the chart. Crowded roads are the other big reason for the shift.

Roads are so crowded today that many people who could afford to buy cars don't buy them. Many others who could use their automobiles more often prefer to ride on subways or railroads rather than buck heavy traffic.

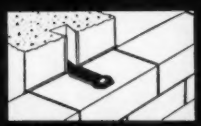
Federal, state and local governments are increasingly aware of the necessity of correcting these conditions—as is evidenced by the growing size of appropriations for highway building and the never-ending search for new methods for financing highway construction. Future trends will analyze the national need for roads and discuss the means for financing their construction.

Gateway dovetail Anchor Slot and anchors

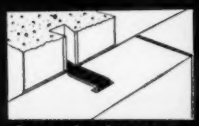
GATEWAY Anchoring Devices provide the best and most accurate means of anchoring Brick, Stone, Tile and Blocks to Concrete. The Dovetail Anchor Slot comes with a filler (ASF) which makes it completely clog-proof with no chance of concrete getting inside. It is also available without a filler (ASP). The Anchor Slot is of 22 or 24 gauge galvanized stock. The anchors are 3½" long from the face of the concrete to the end of the anchor and are stocked in 16 ga., 14 ga. and 12 ga.



DOVE TAIL ANCHOR SLOT—(ASP OR ASF)



Brick anchored to concrete



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• **Wanted: More aluminum parts**—Before Oct 1, the Defense Production Administration will announce details of the long-awaited domestic aluminum expansion program. Inside sources say it probably will call for an increase in annual capacity of about 250,000 tons. DPA still insists on having this capacity built by producers new to aluminum production. Most likely candidates: Kennecott Copper, Olin Industries, and Spartan Aircraft.

New producers have been hard to interest. They gripe at the infeasibility of making aluminum at existing price ceilings; they bluntly want subsidies, a concession DPA does not want to make. DPA's announcement will lay the groundwork for more government-industry negotiations.

Alcoa's proposed $400-million project in the Taiya Valley of Alaska (ENR Aug. 28, p. 21) does not figure in DPA's plans. The new expansion is supposed to supply aluminum ingots to the stockpile in 18 months; Taiya won't go into production for another five years after construction gets started. So far, the Canadian reception to Alcoa's plans has been cool. The talk in Canada is that the project would interrupt navigation on the Yukon, a charge which Alcoa denies. The real story behind Canada's objection appears to be sentiment at the U.S. brush-aside of the bid by Aluminum Co. of Canada for long-term commitments for U.S. stockpile purchases.

• **New line-up**—You can look for changes next January among government officials who direct construction programs. New faces will show up in top jobs, no matter who wins the election. Should the Republicans take charge, the turnover will be drastic.

Besides Cabinet officers like Secretaries Lovett, Chapman, Sawyer and Brannan (of Defense, Interior, Commerce and Agriculture), there are many other high-level officials who serve at the pleasure of the President.

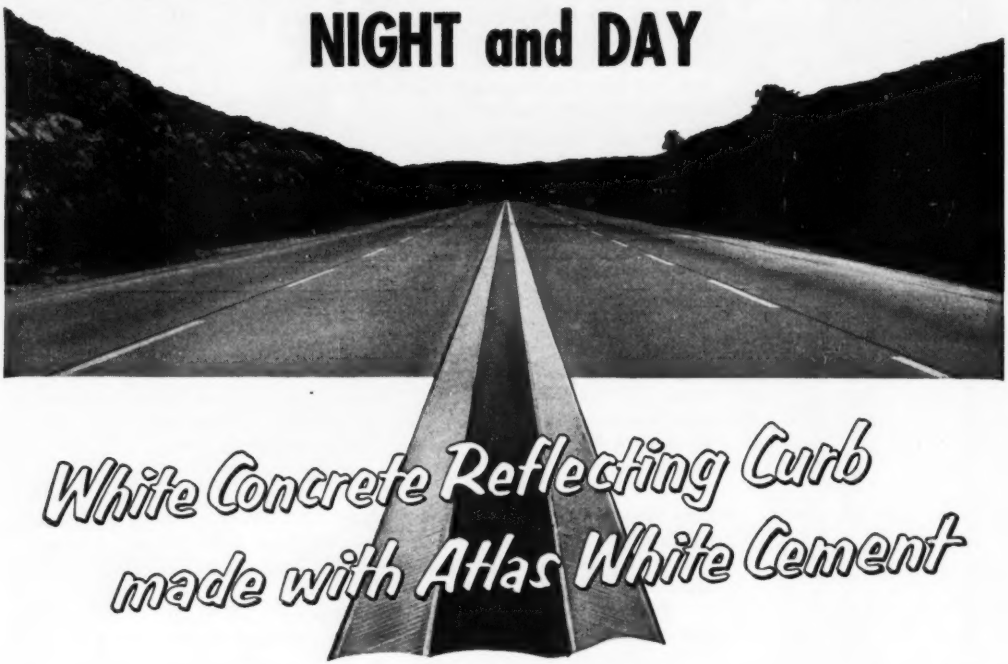
Among these are the secretaries of the three military departments (Pace of Army, Kimball of Navy and Finletter of Air Force), as well as administrators and commissioners like Foley of Housing and Home Finance Agency, Greene of Federal Housing Administration, Egan of Public Housing Administration, Ewing of Federal Security Agency, Larson of General Services Administration, Gray of Veterans' Administration, and Straus of the Reclamation Bureau.

With the secretaries would go the under secretaries and assistant secretaries. In the agencies, too, administrative aides and division heads would be subject to some changes, at the discretion of new administrators. But these second-level officials are nearly all Civil Service employees, protected against unwarranted firing or demotion below top-grade jobs. They could be shifted inside the agency by a new chief, but they could not be dropped or transferred elsewhere except with their own consent.

To make reshuffling easier for a new boss, agency officials customarily offer courtesy resignations to permit shifting from their present administrative posts. In the housing group, for example, such shifts could occur at HHFA for men like Deputy Administrator Fitzpatrick, Assistant Administrator Hardy, and Division Directors Keith and Orendorff. At FHA, positions such as those of Assistant to the Commissioner McIntosh and Assistant Commissioners Askew, Powell, Cox and Mack might be affected.

• **Who's next?**—One important change will take place in Washington before January. Lt. Gen. Lewis A. Pick, who reaches statutory age limit of 62 Nov. 18, wants to retire next month as Army Chief of Engineers. President Truman will choose Pick's successor from several candidates (usually three) recommended by a board of officers.

Points the way to GREATER SAFETY NIGHT and DAY



White Concrete Reflecting Curb made with Atlas White Cement

DRIVERS get the point at any hour of the day or night when you show them the way ahead with White Concrete Reflecting Curb. For it's a continuous safety guide . . . mile after mile and hour after hour.

As you can see above, there is a sharp contrast built into White Concrete Reflecting Curb made with Atlas White Cement. By day, its true white stands out clearly against pavement grey. But that only begins the safety service of this more visible curb.

After dark, reflecting curb flashes to life at the approach of each automobile. Scientifically angled corrugations in the face of the curb (see lower right) pick up headlight rays and reflect them *back to* the driver. The "concrete mirrors" blend into a bright finger of light, pointing out the median divider or the roadway edges.

And on rainy nights, when visibility is ordinarily worst, reflecting curb is at its best! The rain-washed faces are even more mirror-like . . . so reflecting curb gives extra visibility when it's needed most.

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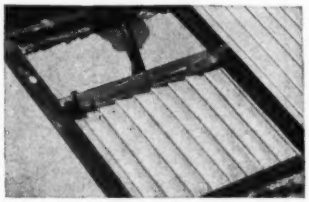
ABOVE—*Pennsylvania Turnpike, King of Prussia Terminus. Designed by Pennsylvania State Highway Dept. Curb installed by Polselli & Angelucci, Philadelphia.*



Detail of reflecting curb shows easy placement. One method is to place a mortar mix of Atlas White Duraplastic air-entraining cement on a grey cement base, screed to 1-inch thickness and score with a hand tool. Contractors prefer Duraplastic because its air-entrainment feature makes the mix more workable, more plastic; makes placement and scoring easy.

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ENR-Cb-77

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ENGINEERING NEWS-RECORD

New construction markets opening

As soon as Regulation X came off last week, bankers, realtors, and construction men began assessing the effects. By week's end, according to a nationwide survey by ENGINEERING NEWS-RECORD, the picture pieced together this way:

Don't expect any large-scale boom, but the lifting of emergency credit controls is going to clear the way for a lot of light commercial construction such as shopping centers, large gasoline and service centers, markets and stores. It is also going to cause a significant increase in construction of homes that cost about $12,000.

Reining in any potential runaway market are: (1) The tightness of mortgage money, (2) restrictions on materials under the Controlled Materials Plan. But both reins are loosening.

• **Money to ease**—There is general agreement among Federal Reserve officials, mortgage bankers, and builders that removal of the Regulation X 50% down-payment requirement on commercial building will give a real stimulus to this class of construction.

The effect will become more noticeable in volume of commercial building as steel supplies ease after the first of the year, but plans already are being made. For example, one architect in Hartford, Conn., reports his organization received requests for preliminary plans on 10 commercial jobs "less than 24 hours after the first radio report was made on the lifting of Regulation X."

The Mortgage Bankers Assn. predicts flatly in its Washington letter to members this week: "An increase in the volume of loans to new commercial building is certain to take place, with a considerable amount of insurance funds going in this direction."

Owners now again can resort to devices like second trusts or bond issues (where the owner incorporates) to finance a big share or all of the costs. Borrowing on conventional first mortgages, of course, remains subject to federal and state laws. National banks are limited to 60% of appraised value, the lowest limit; Federal Savings and Loan Associations have the highest, 80%. In between are insurance companies, state banks and state-chartered building and loan associations, limited to two-thirds of property value.

RICHARD A. McDONALD, new NPA administrator.

ENR's survey shows that loans for most of the new commercial construction will require down payments hovering around one-third instead of the 50% formerly required under Reg. X.

• **Sidelights**—Building contractors have felt the pinch of Reg. X on commercial building for some time. The Associated General Contractors, as far back as its February convention, called by resolution for removal of restrictions on commercial and residential building. And the Construction Industry Advisory Committee of the National Production Authority asked the agency to transmit the ASME recommendation to the Federal Reserve Board.

These actions helped persuade the board that credit controls on commercial building should be suspended, despite the opposition of the Economic Stabilization Agency. Chief Stabilizer Roger L. Putnam and his aides argued that lifting of Regulation X would open another crack in the government's dam against inflation.

That danger is not much feared by Washington officials today. It would be possible legally for the Federal Reserve Board to reimpose credit controls on commercial construction at any time up to June 30, 1953. But nobody foresees any inflationary threat that could warrant such action. For all practical purposes, the credit controls on commercial building are regarded as being completely dead now.

Release of credit restrictions on commercial construction will also produce more pressure for relaxation of CMP restrictions. Already construction industry spokesmen are pressing for virtual elimination of controls on critical materials by the first quarter of next year, and complete removal by the second quarter. Richard A. McDonald, new NPA Administrator, will have a hard time keeping the lid on.

• **Where it will happen**—Reports to ENR show that, in certain areas, the effect on commercial construction will be felt more strongly than in others. Building in the area of New York City is expected to surge. The New York Building Congress, Inc., was particularly happy about the relaxation.

Philadelphia construction men are expecting a real upswing in commercial projects in the $25,000-to-$50,000 bracket. Architects and contractors in the Hartford, Conn. area agreed the area would see increased activity. In Columbus, Ohio, more commercial building is expected to result; but in Cincinnati and Cleveland, no important increase is expected. Milwaukee does not expect a big upsurge. Chicago foresees more commercial building coming.

Charleston, W. Va., does not see any big increase coming. Knoxville and Memphis, Tenn., and Louisville, Ky., are more optimistic. Projects under $50,000 will feel a lift.

Paul Hinds, executive manager of the Miami chapter, Associated General Contractors, is quoted in the Miami Herald: "Now, investors can do some long-range planning for office buildings, shopping centers, stores and other commercial buildings. We're back in a free money market with trade and commerce."

In New Orleans, AGC spokesmen, realtors and bankers don't see where removal of Regulation X will make much difference. In Little Rock, Ark., commercial building will be stimulated. Kansas City expects no great flurry.

Omaha, Neb., does not expect any significant effects. Reports from Houston, Dallas, and San Antonio show considerable new commercial building will be produced, especially in the

cost brackets under $50,000. Salt Lake City, Utah, is not excited over new commercial prospects.

Expansion of existing firms will be among the commercial projects that will be expedited in Sacramento, Calif. and other new projects are anticipated; but generally in the Far West, suspension of Regulation X isn't expected to have any startling effects. Commercial real estate has been very tight recently.

Home builders optimistic

The lifting of Regulation X gave joyous overtones to National Home Week as homebuilders across the nation opened their showcases to prospective buyers in 100 cities last week. More than 5,000 new houses were open to inspection by Mr. and Mrs. Home Buyer—plus all their friends and neighbors. Visitors by the thousands trooped through exhibit homes. Sales ran into many millions.

Minneapolis had 50,000 visitors to its houses on the first day. Big home weeks also were reported from Memphis, Rochester, N. Y., Mansfield, Ohio, Indianapolis, Atlanta, Wichita, Salt Lake City and Dallas. Long Island, N. Y., put out a 58-page directory listing 120 locations, with from one to ten houses open to the public.

Exhibit homes showed a continuing trend toward one-story, basementless homes, carefully ventilated, having more windows, improved lighting and a strong accent on indoor-outdoor living.

Almost universally, the houses featured streamlined kitchens completely equipped with sinks, ranges and refrigerators. Many of the houses included garbage disposal units, automatic laundries, with washers, dryers and even ironers. Air conditioning was a big attraction, particularly around Houston, Dallas and Fort Worth.

The promotion came on the heels of a report from the Bureau of Labor Statistics that the number of new houses (99,000) started in August was about 5% below July—a report which precipitated the lifting of Regulation X for home building. The simultaneous removal of credit restrictions and National Home Week promotion was acclaimed by homebuilders universally as a real shot in the arm.

• **What it will mean**—In annual volume of construction, homebuilding runs six times as large as commercial building. And in this bigger area of construction, housing officials, FRB credit advisors and homebuilders see a moderate bulge resulting—mostly in the $12,000 and up price brackets. Their consensus points to a modest lift in the housing market this fall and next spring. The lift will show up both in house sales and in number of houses started.

Everyone points out that the basic problem in the housing market for the last year has been the supply of funds rather than credit terms. The same basic factor will continue to control the market, according to the experts.

The Mortgage Bankers Assn. summarizes the situation for its members, who serve as local correspondents for the big lending institutions. More residential mortgage money actually has been available this year than last, but the increase has been concentrated in savings and loan associations and has gone mainly into conventional mortgages. (These associations over the years have put more than 70% of their residential loans into conventional mortgages.)

Insurance companies in the first half of this year put one-third less into mortgages than last year. Their lending on conventional mortgages was off only 17%, but acquisition of FHA paper was down 28%, and of VA 65%.

Behind the decline lie two big reasons: Insurance companies would have had to sell government bonds at less than par to raise additional new investment funds, and VA and FHA interest rates were too low to be attractive.

This last factor shows up in the overall national record for the first five months of 1952 on mortgages of $20,000 or less. By comparison with the same five months of 1951, lending on VA's dropped from 23% of the total to 18%, and on FHA's it fell from 14% to 10%; conventional lending on the other hand increased from 63% last year to 72% this year.

• **Change debated**—Builders, housing officials and FRB advisers think there will be a slight increase in number of new housing starts. But no statistical gage exists for measuring this increase against what would otherwise have occurred. Because of the lag-lapse time factor in government estimates of new houses started, the effect (if any) could not show up before the October figure—or more probably the November figure—is compiled.

But the Mortgage Bankers Assn. takes a different view. It advises its members that the total volume of new housing is not likely to be affected, because builders have anticipated the change for the last three months. In fact, it warns that a more than seasonal letdown may come in the late fall unless the market response is greater than now seems likely.

Other results forecast in the Washington letter to mortgage bankers are: (1) Possible increase in FHA lending on new houses in the $12,000-to-$17,000 bracket, (2) FHA financing of more expensive houses restricted by the new $14,000-limit on FHA mortgage loans, (3) VA lending stimulated only to the extent that Fannie Mae funds are available for government purchase of these mortgages, and (4) sales of higher-priced houses helped to some degree where second mortgage money is available.

On one point there is general agreement: Lifting of the emergency curbs is not going to change the attitude or policies of private lenders on the amount and terms of mortgage loans. The homebuilders emphasize that view. As they see it, the days of no down payments are gone for good.

Homebuilders, however, look for a mild sales boom in completed houses that builders have not been able to sell, but they definitely do not expect any major boom. In general, they are mildly optimistic. They see the return of FHA regulations to the old standards of insuring loans up to 95% of value on low-cost houses and up to 80% on high-cost properties (subject to the $14,000-loan limit) as helping all along the line—except, of course, where the lenders demand larger down payments.

Similarly they expect the reduction of VA down-payment requirements (to a 5% maximum) to help GI sales. Some lending groups, such as the National Savings and Loan League, also think this big cut in VA requirements may aid the financing of residential developments hanging fire.

• **Some are cautious**—ENR's survey showed that optimism in the home building field was not universal. Many made cautious predictions; in some areas little increase at all was foreseen.

In Salt Lake City, Alan E. Brockbank, president of the National Association of Home Builders, reported, "Sales of homes priced at above $25,000—many of which have been withheld from the market by builders—should rise." He foresaw little effect in low-cost home construction, but said lowered down-payment provisions would take the brakes off sales and the building of homes priced above $12,000. He expressed sharp disappointment that the amortization period has not been relaxed.

Housing and Home Finance Agency Administrator Raymond M. Foley indicated he was not too happy about loosening the curbs and said he thinks Regulation X might soon be back. HHFA is keeping all the controls it can, he said. Foley's remarks suggested he thinks the relaxation of credit may spur housing starts over the 1,200,000 starts per year rate which would permit the restrictions to be restored.

Licensing racket alleged in Florida

The licensing of contractors has long been a storm center of controversy in the construction industry. Last week the proponents of licensing legislation were embarrassed by a scandal in Dade County, Fla.

Charges were filed in criminal court in Miami against H. H. Hill, former secretary of the county Board of Contractor Examiners, alleging that he accepted $350 from Elmer Kudinger and $300 from E. F. Fatter for sub-contractors' licenses. Eleven other contractors signed affidavits that they had paid fees according to a schedule ranging from $50 to $1,000.

Hill had been secretary of the county board of examiners since Sept. 22, 1949. Evidence that led to the charges was discovered on Aug. 6 while he was on vacation. Hill was quietly removed as secretary and replaced by Robert F. Cook, director of County Building, Planning and Zoning. Details were withheld from publication until an investigation was completed.

The method of issuing licenses in Dade County and the municipalities in the county works this way: There is a reciprocity agreement between the County Building Department and each municipality. The county recognizes licenses issued by the municipalities, and they allow contractors licensed by the county to build in their cities without examination.

According to the allegations, a contractor would make the necessary arrangements with Hill, who would then write a letter addressed to the contractor examining board of, say, the city of Miami. The letter would say that the contractor had been duly licensed by Dade County and was entitled to a city license.

Some of the 13 contractors involved alleged that Hill required them to bring the money in cash to his home. Others said they shoved the cash across the counter in Hill's courthouse office. Each contractor claimed he resorted to this method of getting a license because the county holds only two examinations a year.

• **Action results**—Filing of the charges led to fast action. W. H. Peace, chief building inspector for the city of Miami, announced that a check of his records showed 26 city licenses issued on letters from Hill. He said none of these licenses will be renewed when they expire Sept. 26 unless the contractors take the city's regular examination.

County Commissioner Jess Yarborough, head of the Dade County Building, Planning and Zoning Division, and member of the Contractors Examining Board was "shocked" by the disclosures. He said that henceforth every person applying for a county contractor's license will have to present a certificate from the examining board of the municipality with which the county has a reciprocal agreement. The certificate will be signed by the board members, show the date the contractor was examined, and the grade he made in the municipality examination.

Bids opened as prayer, theft, fists are invoked to halt Tuttle Dam

Bids were opened last week by the Kansas City District Office of the Army Corps of Engineers for initial work on the controversial Tuttle Creek Dam across the Blue River, near Manhattan, Kan.

Apparent low bidder was George Bennett Construction Co., of Kansas City, Kan., with a bid of $2,234,604. Government estimate was $2,921,599. There were 10 bids, ranging up to $3,354,053.

Initial work calls for partial excavation of the spillway, a portion of the outlet works conduit, a construction bridge, and a small amount of initial fill.

• **Residents oppose big dam**—The bid opening did not ease demands of local residents that the Tuttle Creek Dam be junked in favor of a program of small dams and soil conservation practices.

Not since the days of "Bleeding Kansas," residents said, has the valley been as aroused as it is over the dam.

The opposition to the dam has taken many forms:

Engineers' stakes have disappeared by night. Signs denouncing Tuttle Creek as "Big Dam Foolishness" dot the area. Manhattan merchants known to favor the dam complain of a boycott that cuts business. Farmers have clashed with field survey crews. The big Blue Valley Study Assn., under whose banner opponents of the dam have rallied is readying a campaign to urge Congress to deny funds to the project. Prayer meetings, asking divine intercession, have been held at the dam site. Delegations of Blue Valley women have traveled to see both President Truman and Dwight D. Eisenhower.

The result has been to make the Tuttle Creek controversy seem bigger than it is.

The Tuttle Creek dispute stands as the first head-on, fight-to-the-finish collision between those who want to control the nation's streams by big dams—and those who look to detention dams and land management practices—to do the job. The first is the Army Engineers' approach. The second is that advocated generally by the Department of Agriculture.

The $80-million project would bring a major upheaval in the valley, residents said. Slated to go under water are 225 sets of rural improvements, seven towns containing 550 village homes and 115 business properties, 20 schools, 20 churches and 1,700 graves. Three thousand people will have to move.

Under present plans, the Army Engineers would acquire 70,000 acres of land that residents claim is three to four times as productive as that of their neighbors.

Since Tuttle Creek will be operated as a dry dam, 50,000 acres—unlikely to be flooded oftener than once every three years—would be leased back for farming.

All this, valley residents said, is too high a price to pay for the flood benefits that Tuttle Creek will bring. The Blue River, residents asserted, has never been a major contributor to Kansas River floods. At any rate, the job could be done by the "regimented raindrop" approach, they asserted.

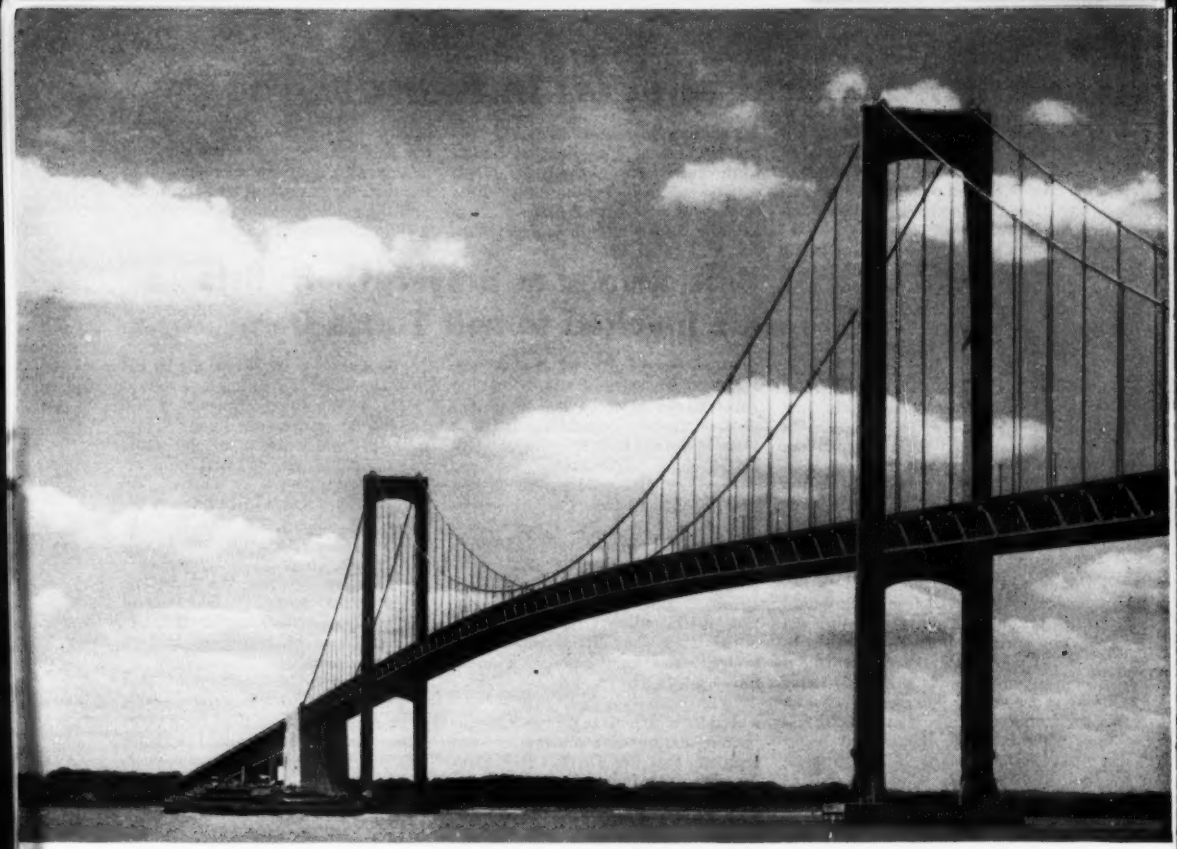
• **Engineers defend dam**—Army Engineers replied that valley residents are wrong in both assertions.

Tuttle Creek, located five miles above the mouth of the Blue River, is a key structure in the Army Engineers' plan to control Kansas River flooding, said Col. L. J. Lincoln, District Engineer at Kansas City.

The 9,600-square mile Blue River Valley constitutes about one-fifth of the Kansas River's 45,000-square mile watershed. In the 1951 Kansas River flood, which measured 510,000 cfs at Kansas City, the Blue River contributed 101,000 cfs.

Valley residents are claiming more for the Department of Agriculture's methods than the Department of Agriculture itself claims, Colonel Lincoln said. Officials of the department have said that the regimented raindrop approach cannot do the job alone.

But, to date, these assertions have carried little weight with the Blue Valley residents who appear determined to halt the project.



WINNER OF THE CLASS I AWARD is the 2,150-ft span suspension bridge over the Delaware River (ENR Aug. 15, 1951 p. 15).

WINNER OF CLASS IV is the Harlem River Pedestrian Bridge from East 103rd St., Manhattan to Ward's Island, New York. Opened May 18, 1951, it was built at a cost of $2 million and is 330 ft long.

AISC selects "Most Beautiful"

Selections were announced this week of the winners of the 24th annual beautiful bridge competition sponsored by the American Institute of Steel Construction. Stainless steel plaques will be awarded to four bridges as first in their class and honorable mention certificates will go to seven others. Here are the winners:

Class I

(For bridges with spans of 400 ft or more.)

Delaware Memorial Bridge, 3 miles south of Wilmington over the Delaware River. Owner, State of Delaware; designer, Howard Needles, Tammen & Bergendoff, New York City and Kansas City; consulting engineer, O. H. Ammann; consulting architect, A. Gordon Lorimer; fabricator, American Bridge Co. The Delaware Memorial Bridge was chosen for "its sensitive expression of the suspension form of bridge construction. Its beauty can be seen either from the water or from the bridge itself, and harmony is shown all the way through. Every detail is appropriate to its purpose."

Class II

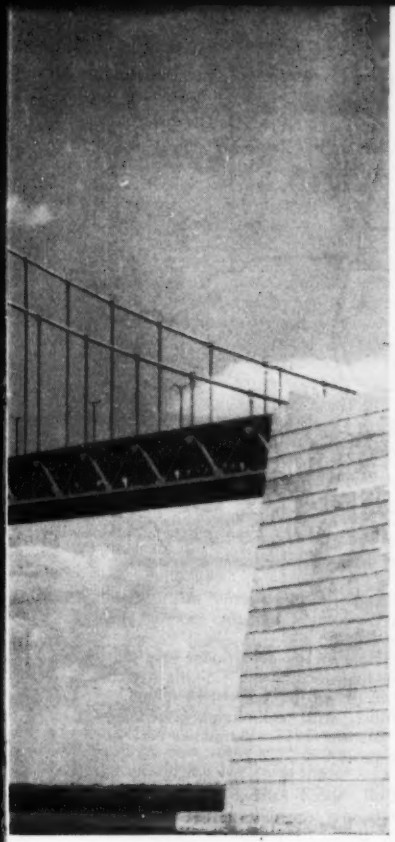
(For bridges with spans under 400 ft costing over $500,000.)

Forebay Channel Bridge, Davis Dam project, Arizona-Nevada. Owner, U. S. Bureau of Reclamation; designer, U. S. Bureau of Reclamation, Denver, Colo.; fabricator, American Bridge Co. The Forebay Channel Bridge was chosen for "its chaste design of classic simplicity."

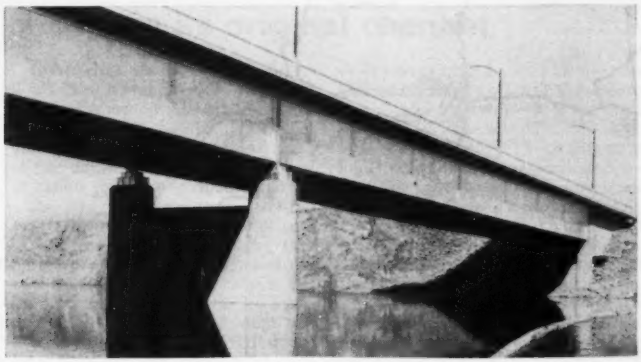
Class III

(For bridges with spans under 400 ft costing less than $500,000.)

Grove Street Overpass, Route 128, Lexington, Mass. Owner, Massachusettes Dept. of Public Works; designer, Thomas Worcester, Inc., Boston; fabricator, West End Iron Works, Cambridge, Mass. The Grove Street Overpass was chosen because "its scale is consistent and the materials appropri-



It was built at a total cost of $44 million.



WINNER OF CLASS II is the Forebay Channel Bridge, part of the Davis Dam construction project. Built at a cost of $710,000 this 210-ft span was opened in July, 1951.

WINNER OF CLASS III is this bridge which carries Route 128 over Route 9 at Wellesley, Mass. Built for $134,000, having a span of 60 ft, it was opened July 28, 1951.

bridges

ately used. This crossing of two arteries recognizes each and gives adequate expression to both."

Class IV

(For moveable bridges.)

Harlem River Pedestrian Bridge, East 103rd St., Manhattan to Ward's Island, New York City. Owner-designer, Triborough Bridge and Tunnel Authority, New York City; consulting engineer, O. H. Ammann; fabricator, American Bridge Co. The Harlem River Pedestrian Bridge was chosen because "it is a quiet and welcome contrast to our shortline clutter. The simple vertical columns neatly express the lift function of the bridge, and the well-studied curve of the walkway is inviting to the pedestrian."

Honorable mention

Class I, Honorable Mention: Los Alamos Canyon Bridge, Los Alamos, N. M. Owner, U. S. Atomic Energy Commission; designer, Finney & Turnipseed, Topeka, Kan.; fabricator, American Bridge Company.

Atchafalaya River pipe line suspension bridge, Mellville, La. Owner, Transcontinental Gas Pipe Line Corp., represented by the Fish Engineering Corp., acting as agent, Houston, Tex.; designer, Matthew & Kenan; fabricator, American Bridge Company.

Class II, Honorable Mention: Basilone Memorial Bridge over Raritan River, New Brunswick, N. J. Owner, New Jersey Turnpike Authority; designer, Fay, Spofford & Thorndike, Boston, Mass.; fabricator, Harris Structural Steel Co., New York City.

Class III, Honorable Mention: Morningside Drive Underpass, North-South Freeway, Fort Worth, Tex. Owner, State of Texas; designer, Texas Highway Dept.; supervising designing engineer, A. M. Gordon; fabricator, Virginia Bridge Co., Memphis, Tenn.

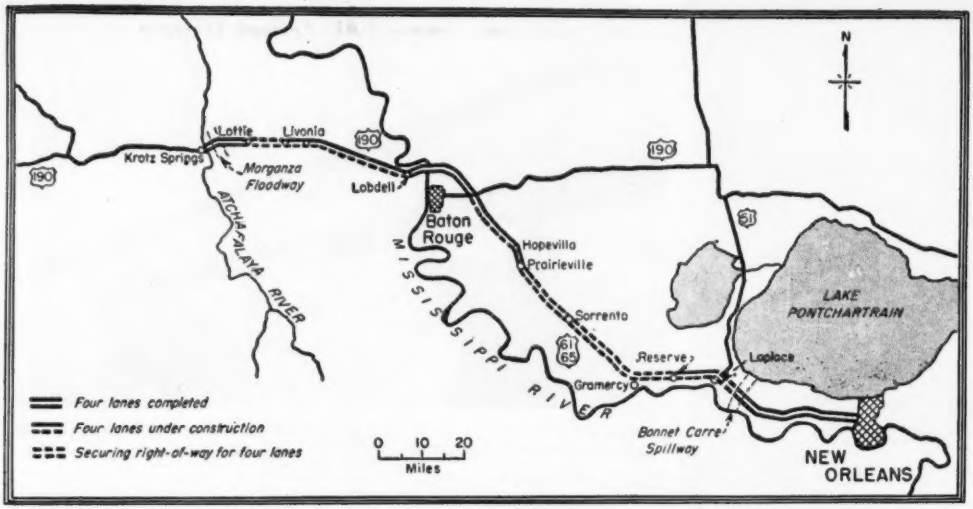
Sacramento River Bridge, Shasta Dam, Central Valley project, Calif. Owner, U. S. Bureau of Reclamation; designer, U. S. Bureau of Reclamation, Denver, Colo.; fabricator, Bethlehem Pacific Coast Steel Corp.

Spillway Bridge, Cedar Bluff Dam, Kan. Owner, U. S. Bureau of Reclamation; designer, U. S. Bureau of Reclamation, Denver, Colo.; fabricator, Kansas City Structural Steel Co.

Class IV, Honorable Mention: Sea Bright Bridge over south branch, Shrewsbury River between Rumson and Sea Bright, N. J. Owner, Board of Chosen Freeholders, Monmouth County, N. J.; designer, Morris Goodkind; director and chief bridge engineer, N. J. State Highway Dept.; consulting engineers, Howard Needles; Tammen and Bergendoff; fabricator, American Bridge Co.

Judges

The jury for prize bridge awards consisted of: Richard F. Bach, dean of education and consultant in industrial art, New York Metropolitan Museum of Art; C. Storrs Barrows (architect), Rochester, N. Y.; William P. Cox, Eason, Anthony, McKinnie & Cox, Inc. (architects), Memphis, Tenn.; Professor Phil M. Ferguson, chairman, department of civil engineering, University of Texas, Austin, Tex.; and Philip Will, Jr. (architect), Perkins & Will, Chicago, Ill.



Airline Highway speeded

The Louisiana Highway Department has given the green signal to make the 123.4-mile Airline Highway a minimum four-lane traffic artery along its entire length.

The highway runs from New Orleans to Krotz Springs, the latter a junction point for highways to the Midwest and West and to south Texas points (see map). It is the main highway to Baton Rouge, 83 miles from New Orleans.

Planned more than a decade ago as a four-lane-or-more highway, work was interrupted by World War II and the demands for road building in other parts of the state.

The road, which includes U.S. Highways 61 and 65 between New Orleans and Baton Rouge and U.S. Highway 190 from Baton Rouge westward to Krotz Springs, now has a total of 47.1 miles of four or more divided lanes.

Work of widening the highway is now under way along 41.6 miles on both sides of Baton Rouge.

And at the present time right-of-way is being obtained for 34.7 miles of new construction.

The State Highway Department believes that completion of construction now under way or planned will make the Airline Highway the longest four-lane, toll-free highway in America. This is expected to become a reality in the spring of 1954.

• **Plans detailed**—A 29.1-mile stretch of the highway—between Reserve and Prairieville, about midway between New Orleans and Baton Rouge—is being held up for improvement because rights-of-way have not been fully obtained. The highway department, however, expects to obtain all necessary rights-of-way in the near future, with improvement work scheduled to start early in 1953.

The department, in establishing a tentative schedule of when the right-of-way will be complete, when bids will be received and when the projects will be completed, has divided the 29-mile stretch into three separate jobs. These are:

1. A 6.9-mile stretch roughly from Reserve to Gramercy. The existing two-lane highway will be widened to four lanes, with the concrete strips separated by a 34-ft median. Probable date for receiving bids will be in January, 1953. Estimated cost is $767,800.

2. The 11.9-mile stretch between Gramercy and Sorrento. Bids will be received in January, 1953, on a similar two-lane addition, with the probable completion date set in March, 1954. Estimated cost is $2,003,800.

3. A 10.3-mile stretch between Sorrento and Prairieville. The highway department anticipates receiving bids in April, 1953, on the widening of the existing two lanes to four lanes. Estimated cost is $1,212,700. Completion of the job is expected in April, 1954.

Work, on which no contracts have been let, includes another 5.6-mile stretch of the Airline Highway, this one west of Baton Rouge and near the Krotz Springs terminus of the highway. Here, too, the right-of-way is incomplete. This portion of the highway is located between Livonia and Lottie.

The highway department says that bids for widening the 5.6-mile stretch probably will be received by it in December, with completion scheduled in August, 1953. Estimated cost of the project is $418,200.

• **Full speed ahead**—All necessary funds are available and Louisiana's new Board of Highways, headed by Sherwood R. Loe, of Shreveport, and its director of highways, George S. Covert, has expressed its intention of completing the multi-laned highway at the earliest possible date.

• **Traffic study results**—A daily average of 35,270 vehicles use the Airline Highway at the Tulane Ave. overpass on the outskirts of New Orleans, as starting point. Just above Laplace, where U.S. Highway 51 splits off to the north and east, the daily average is 5,440 vehicles, with the count increasing toward Baton Rouge.

At Baton Rouge, where U.S. Highway 190 comes in from the east, the traffic count at the Mississippi River Bridge shows a daily average of 11,710 vehicles. And at Krotz Springs, the western end of the four-lane improvement project, the traffic count is 5,570 a day.

The 41.6 miles of construction under way on both sides of Baton Rouge includes not only the building of new two-lane stretches parallel to the old road, but also much new four-lane concrete pavement to eliminate hazardous winding stretches and shorten distances between points. Old roadways, which will form two lanes of

the highway, are being resurfaced as the new lanes are being built.

• **History**—The work of adding multiple lanes to the old New Orleans-Baton Rouge highway was started 16 years ago when 3.7 miles out of New Orleans was improved to include eight lanes of traffic. Finished at about the same time was 13.2 miles of concrete paving, made up of eight-, six-, and four-lane roadways, an extension of the former project.

In March, 1942, another extension went into service—this one going to the 2.3-mile Lons Bridge and approaches of the Bonnet Carre Spillway completed five years earlier.

West of Prairieville, 4.3 miles are being widened to four lanes with a 43-ft earth median separating the concrete roadways.

Also under construction are the western lane of the Bayou Manchac Bridge, a few miles east of Baton Rouge, and 5.8 miles of new four-lane concrete pavement from the bridge toward Baton Rouge.

From a point just east of Baton Rouge to the Florida Street Traffic Circle in Baton Rouge, a distance of four miles, 2.8 miles of two-lane pavement is being widened to four lanes.

All in all, the major improvement projects now actually under way on the airline involve expenditures totalling approximately $4.2 million. The major projects to come in the immediate future will cost between $4.5 and $5 million.

Contractors ease Missouri River back into its original channel

Contractors building the Gavins Point Dam across the Missouri River are succeeding in making the river abandon a new channel that it cut during the spring flood without any of the difficult work usually involved in closing off a newly cut channel.

Profiting by lessons learned by the Army Engineers in their years of controlling rivers like the Missouri, they have built a long "trail dike" out into the river some distance above the start of the new channel, following roughly the right side of what was the old channel before the spring break-through. As this dike progressed out into the new channel it slowly forced the river to follow a new and longer route to get into the cutoff.

No attempt was made to close the channel completely, but its width was cut down slowly until it was only 350 ft wide when it had reached the point above the island in midstream, as shown in the photo.

By this time the length of the channel around the point of the dike had been made greater than that of the old silted channel to the left of the island. As a result, the river flow began to increase, deepening the channel.

Construction of a second spur dike out into the new channel farther downstream helped to check the flow through that channel and thus added to the quantity of water going back into the old channel.

Last week with 71% of the water going down the left channel, and the trail dike out 3,500 ft, engineers expected to complete the channel shift by week's end.

Return of the river to its old channel was necessary because Stage I of the construction program for the dam, which was under way when the flood came, called for building the intake structure and powerhouse across the swampy expanse then lying to the right of the midstream island, connecting the powerhouse with the island and the high ground on the right bank by earth embankments.

For Stage II, the river is to be diverted through the penstock openings in the intake structure, permitting the left channel to be closed as a preliminary to building the embankment across that side of the river valley.

This diversion work is being done by the List and Clark Construction Co. of Kansas City, which holds the $861,000-contract for Stage I. John C. Hays is area engineer for the Corps.

The Gavins Point Dam will be 8,700 ft long and 74 ft high, a rolled fill of chalk and earth requiring handling of 18,000,000 cu yds of material.

At Gavins Point on the Missouri River a new channel cut during last spring's flood to the right of the wooded point, that now is an island in midstream, is being closed by means of the long dike shown in the right foreground. Start of work, on Gavins Point Dam, an earthfill structure, can be seen on the right shore. The dam is near Yankton, S. D.

Metals outlook grows brighter

Construction equipment manufacturers learned last week that steel, copper and aluminum production—with a few exceptions—should catch up with outstanding allotments early next year. This heartening news was presented by representatives of the Defense Production Administration at the annual fall meeting of the Construction Industry Manufacturers Assn. in Chicago.

As a result of the 15,000,000 tons of steel production lost during the strikes last summer, current third-quarter allotments will not be filled by the mills until late November of this year. Structural shapes, such as wide-flange beams, probably will remain tight through the second quarter of next year, but flat rolled sheet and strip steel production should catch up with allotments by February.

Copper isn't as tight as it was a year ago. An estimated 90% of civilian demand should be met during the first quarter of 1953, including present stockpile requirements for our national defense program.

Estimates of aluminum production are nearly as optimistic. By the second quarter of next year production should be able to meet most of the civilian demand, in addition to military requirements.

Two factors, however, can change this situation during the next few months. It can brighten if actual purchase orders don't take up full allotments; or it can worsen if military or stockpile requirements for national defense are increased.

There is little prospect of a road show of construction equipment being held during the next two years. The chief reason, reported CIMA's exhibits committee, is the absence of any sentiment in favor of it at this time by the equipment manufacturers.

Turnpike commission dodges legal fight

West Virginia's State Turnpike Commission is making strong efforts to solve its legal difficulties without resorting to the courts.

Last week it sought additional information from bankers and engineers on how it could comply with Governor Okey Patteson's recent order (ENR Sept. 18, p. 26) directing it to build its projected toll highway from Charleston to Princeton with four lanes instead of two with a third lane for trucks on steep grades. Patteson's order was based on a State Attorney General's ruling that construction according to present plans would violate the Turnpike Enabling Act.

The group asked Guaranty Trust Co. of New York, which holds a $96-million bond issue in trust for the commission, two questions:

1—"For what purpose may the commission now issue its revenue bonds, and, specifically may it now issue bonds to provide funds to construct additional lanes throughout the length of the at-present-projected turnpike?"

2—"May the commission expend monies now held by the trustee for the purpose of constructing any turnpike project other than the at-present-projected two-lane turnpike, and specifically, may the commission now expend such funds for the construction of a shorter turnpike having dual lanes in each direction?"

Correction

In ENR Sept. 4, two photos on pages 144 and 145 were interchanged and miscredited. On page 144, the caption for the photo in the upper left-hand corner should have read "aluminum-faced panels are lighter, may require less maintenance (H. H. Robertson Co. photo)." For the photo in the upper left-hand corner of page 145, the correct caption is "asbestos-cement panels for curtain walls are priced relatively low. (Celotex Corp. photo)."

Garbage in Big Muddy

Omaha, Neb. (pop. 251,117), last week began dumping its entire collection of garbage into the Missouri River.

People downstream howled, health officials objected, and Omaha's Mayor Glenn Cunningham admitted it was "a shameful thing."

But a hog epidemic that has caused quarantine and slaughter of more than 10,000 animals infected with Vesicular Exanthema (deadly virus that attacks hogs much as Hoof and Mouth Disease hits cattle) has stopped collection operations of Moaha Feeding Co. With no hogs to consume the garbage and no money to operate a sanitary landfill, Omaha turned to the river.

In a special September session of the Nebraska legislature, a law effective next Dec. 6 was passed to ban the feeding of uncooked garbage to hogs. And in November, voters will be asked to vote a special tax for refuse disposal which would yield $800,000 a year. A landfill is planned.

Meanwhile, 60 to 80 tons of refuse a day is being tossed to the Missouri. State Board of Health action has been asked by Bellevue, downstream.

LABOR

Construction work halted by AFL-CIO dispute

Construction work on the $18-million expansion project of West Penn Power Co., at Springdale, Pa., was halted for more than four days by AFL workers who feared the company would use its own CIO maintenance crew to do some of the electrical and plumbing installation work.

About 60 AFL construction workers were directly involved but other workers refused to work. Directly involved were the plumbers, electrical workers and cement finishers.

Here's the issue: Installation work on a small structure on the site of the big project was not provided for by contract. The AFL men walked off the job in the belief that West Penn might put its CIO employees on the job.

A contract for the structure was awarded the Groomes Construction Co., of nearby Cheswick, but it did not cover plumbing and electrical installations.

A company spokeman said that West Penn instructed the contractor to include these jobs in its contract. Groomes employs AFL workers.

A. J. Furlan, secretary of the AFL Building Trades Council, said the company also assured the council that no CIO maintenance workers would be given the installation work.

Welfare fund payments begun in Pittsburgh area

Major construction firms last week inaugurated the first industry-wide welfare fund in the Pittsburgh area by beginning contributions for each of their workers into the recently created Construction Industry Insurance Fund of Western Pennsylvania.

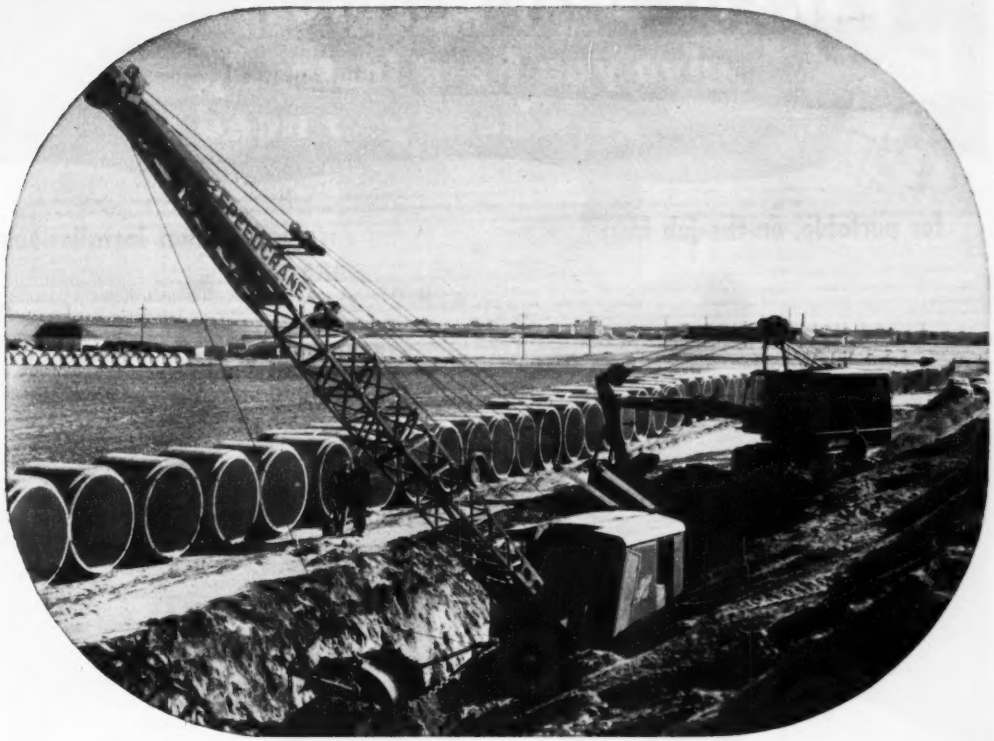
Contributions amount to 7½ cents per hour for each worker covered.

Covered as the program began its operation are: bricklayers; asbestos workers; cement masons; stone, marble and terrazzo workers; roofers; and general teamsters.

No benefit will be paid before Jan. 17, 1953. The benefits will remain unchanged for three years.

Benefits are reported to include:

- $1,500 life insurance.
- Sick and accident benefits of $30 a week for 13 weeks.
- Hospitalization benefits of $10 a day for 70 days (including dependents).
- $200 for miscellaneous hospital expenses.
- $240 for surgical benefits.



Denver builds gigantic storm sewer with 9 miles of *CONCRETE PIPE*

To encourage orderly growth Denver is developing a new addition of 1700 acres—70 per cent for residential and 30 per cent for industrial expansion. To serve this area the city installed the new Northeast storm sewer—using over nine miles of concrete pipe.

The photo above shows a trench being dug 20 ft. deep for 72-in. pipe. All the pipe was placed in open trenches. The sizes and quantities of concrete pipe used in the job are listed at right.

Hundreds of other cities from coast to coast have found that concrete pipe carries off large volumes of water efficiently. Concrete pipe has the strength to resist severe impact and sustain heavy overburdens. Its smooth interior resists abrasion and provides maximum hydraulic capacity. It is moderate in first cost and has the durability to render long years of service with little or no upkeep expense. The result is ***low-annual-cost*** sewer service.

Sizes and Quantities of Concrete Pipe in Northeast Storm Sewer

7,780 ft.	of 72 in. dia.
315 ft.	of 66 in. dia.
4,020 ft.	of 60 in. dia.
5,565 ft.	of 54 in. dia.
12,480 ft.	of 48 in. dia.
6,060 ft.	of 42 in. dia.
4,436 ft.	of 36 in. dia.
912 ft.	of 33 in. dia.
340 ft.	of 27 in. dia.
672 ft.	of 24 in. dia.
700 ft.	of 21 in. dia.
5,552 ft.	of 12 in. dia.

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FAGEOL HEAT MACHINES give you heat instantly ...where you need it!

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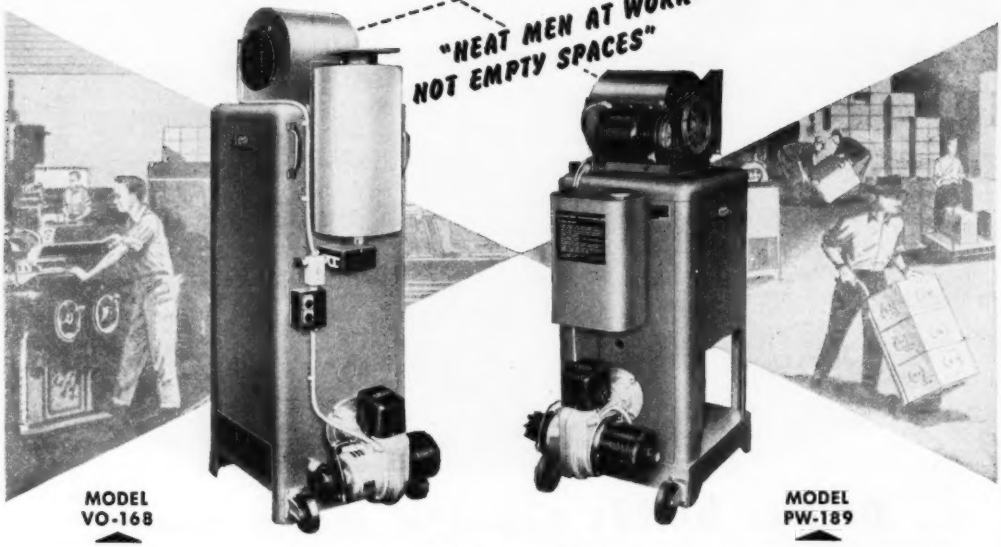

MODEL VO-168

168,000 B.t.u. per hour. For permanent installations or use as a portable unit. Vent optional. (Delivers 130,000 B.t.u. per hour vented.)

MODEL PW-189

189,000 B.t.u. per hour. Highly portable. Attached fuel tank. Requires no flue or vent. Easily converted to fresh air circulator in summer.

At the snap of a switch, Fageol Heat Machines give you fast, efficient heat *—in the work zone where it's needed, not in overhead waste spaces.*

On construction jobs, outdoor loading docks, for permanent plant installations . . . drying, treating and curing materials . . . everywhere heat is needed . . . Fageol Heat Machines keep men warm at work, increase worker efficiency, save man-hours.

They operate on No. 1 or No. 2 fuel oil, kerosene or diesel oil, utilizing the exclusive Fageol patented counterflow principle of spraying heat out in all directions at the floor level. This assures economical heat distribution throughout the 6-foot-high working zone . . . avoids heating overhead waste space.

Write *today* for complete details—ask for Bulletin L-5391.

A-0052

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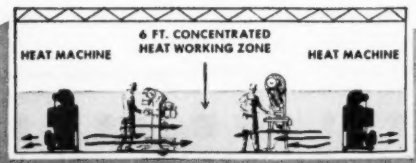


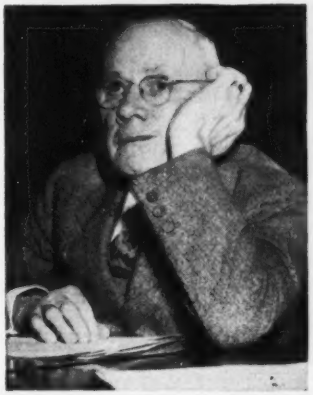
AFL outlines policy in construction

The construction industry couldn't expect much news from the AFL convention which met amidst seven days of handshaking confusion in the Hotel Commodore (Sept. 15-24), in New York City.

The convention was intent on getting behind one or the other of the nominees for president of the United States for the first time since 1924, so business meetings and resolutions were secondary.

Even the most important piece of business which could affect the construction industry—IAM's proposal for settling jurisdictional disputes (ENR Aug. 21, p. 29)—had apparently been lost or relegated to negotiation far from the public eye. Nowhere among the many resolutions and reports was there any notice of the IAM proposal.

But, to pass the time between nominee Eisenhower's Wednesday speech and nominee Stevenson's speech on Monday of the following week, these resolutions and reports—of interest to the construction industry—were presented for approval:



WILLIAM GREEN presided over the convention.

• **Executive council**—The report of the executive council of the AFL indicated that the top brass of the federation took these positions on matters of concern to the construction industry:

• **It was in favor of—**

• **Public housing** to the amount of 135,000 units yearly as originally authorized in the Housing Act of 1949. The report blamed "real estate and home-building interests" for "machinations . . . limiting the size of the program" down to 35,000 units this year.

• **Slum clearance and urban redevelopment** authorized by the Housing Act of 1949. The report said labor should participate in these programs to "prevent them from being used to benefit only industrial and other wealthy interests."

• **Rent control.** The report said dryly that "none of the recommendations of the AFL was accepted." (Concerning rent control.)

• **Federal aid for school construction.** "We regret," said the report, "that no legislation for a permanent building program was adopted by this (82nd) Congress, but we are pleased that . . . a provision . . . made essential funds available for . . . school buildings in the war-impacted areas."

• **The Walsh-Healy Public Contracts Act,** which authorizes the Secretary of Labor to make determinations with respect to minimum wages and standards of health and safety in various industries. The AFL fought for the bill and against amendments. It won some battles (against the Fulbright proposals) and lost others. (The canning industry was given exemption.)

• **The central Arizona project.** The report favored the construction of a dam system in the Colorado River at Bridge Canyon.

• **The Plattsburgh Cantonment.** The AFL council went on record as supporting the construction of troop housing and warehousing facilities in Plattsburgh, N. Y.

• **Ice Harbor Dam.** AFL council fought for money to build this dam on the Lower Snake River in Idaho.

• **Delaware River Port Authority.** The report claimed a share in creation of the Port Authority which will establish port facilities and docks, warehouses and utilities in the Philadelphia, Camden and Chester area.

• **The AFL executive council reported itself against—**

• **The Taft-Hartley Act.** This least surprising of all its pronouncements appeared in many sections of the report. The tone was one of despair that anything but a new set of favorable legislators could give them what they wanted—which is complete repeal of the act.

• **The St. Lawrence Seaway.** The AFL continued its long-standing opposition to the seaway.

Here are some of the resolutions by the membership that can affect the construction industry:

• A resolution to develop the Rio Grande Valley jointly with the Mexican government.

• A resolution favoring a $1.25 minimum wage.

• A resolution favoring "brotherly cooperation" in settling jurisdictional disputes.

• A housing resolution which would favor: (a) Appropriate funds to assure decent housing for every defense worker. (b) Authorize the 135,000 units of public housing as intended by the Housing Act of 1949. (c) Favor low-cost loans for cooperative housing. (d) Restore rent controls "where needed."

• A resolution favoring a national flood control and reclamation commission.

• **Opposing views**—There was some conflict between the executive council report and the views of some of the membership.

For instance: While the executive council opposed the St. Lawrence Seaway, the Wisconsin State Federation of Labor offered a resolution favoring passage of necessary laws for the development of the waterway.

In another case, the California State Federation opposed the creation of the central Arizona project as economically unfeasible in a resolution, while the executive council favored the project.

Resolving the conflicts had to await the final action of the convention which was due early this week—politics permitting.

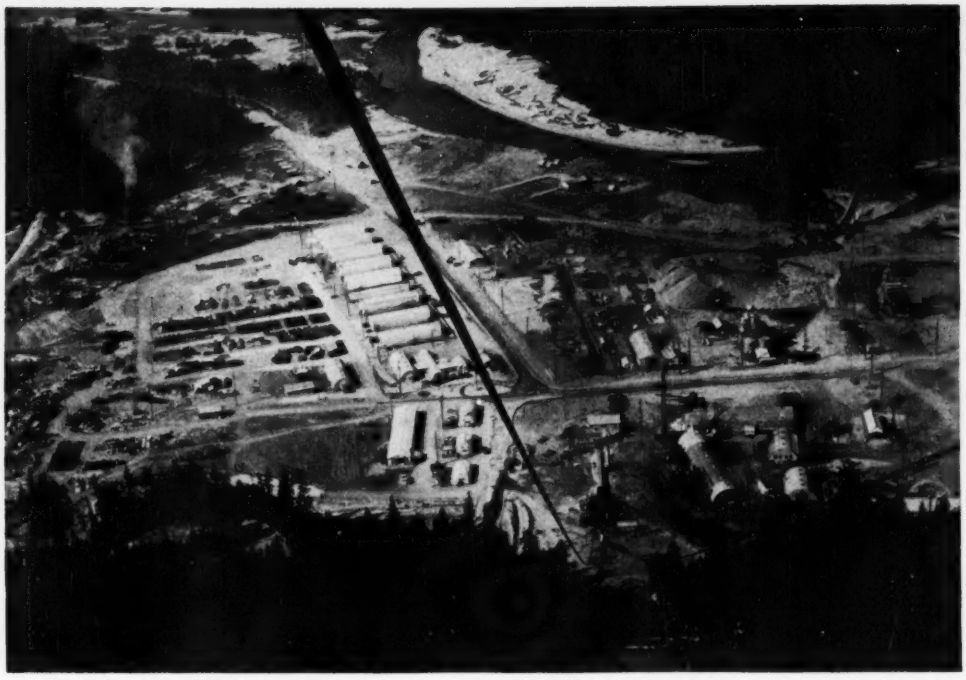
Moreschi at convention shows lawsuit is settled

Joseph Moreschi, president of the International Hod Carriers, Building and Common Laborers Union, attended the AFL convention in New York City.

By his presence he unwittingly disclosed that the international union had quietly settled suits brought against it in 1942 by the Sandhogs Local Union 147 for $3 million damages. Previously he had avoided trial by avoiding New York State.

The suits had claimed that Moreschi and James Bove (former vice-president of the union, now in prison for stealing funds) had tried to destroy the local by denying its members work and had collected dues on projects without the union's jurisdiction.

Settlement involved payment of $132,000 to the union local and its members.



WAREHOUSES AND SHOPS for constructing Aluminum Company of Canada's Kemano, B. C., powerhouse are well supplied despite isolation. Kemano River is in background. Solid black line is cableway supplying penstock and tunnel. (ENR staff photos)

Setting up shop in the wilderness for huge aluminum hydro project

L. L. Wise
Associate Editor

CONSTRUCTION of the world's largest underground powerhouse and accompanying installations is complicated by the fact that they are located at the end of a 440 mile marine supply line. But work on the Aluminum Company of Canada's Kemano, British Columbia, plant is going forward on schedule. And that takes a lot of planning and coordination by both Alcan and the contractor, Morrison-Knudsen Company of Canada, Ltd.

Kemano is located on an inland fiord near the rugged coastline. It is 368 air miles north of Vancouver, in one of the most difficult construction sites any industrial operator could have picked. Rugged terrain and difficult access combine to make headaches out of supply, personnel procurement and transport, camp organization and communications. These factors in turn add to the problems of contract administration and financing.

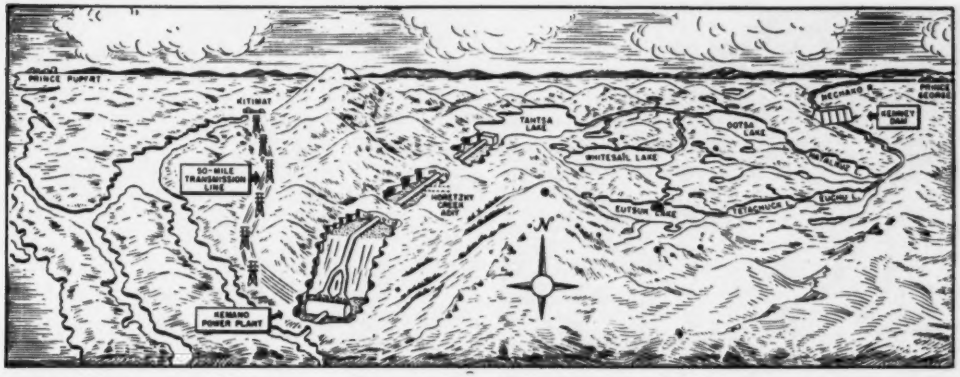
Morrison-Knudsen has responsibility for constructing the initial hydroelectric phases for what will ultimately be the world's largest aluminum smelter, at Kitimat, 50 miles from Kemano.

In brief, M-K's work totals $100 to $150 million and includes these features (ENR Nov. 29, 1951, p. 40): the 3,760,000 cu yd, 317-ft high, rockfill Kenney Dam (formerly called Canyon Dam) dam located 150 miles east of Kemano and being built by Mannix, Ltd., a subcontractor; a 10-mi, 25-ft horseshoe power tunnel; two 4,200-ft long, 14-ft dia penstock tunnels inclined at a 48° angle; an 81½ x 118 x 700-ft underground powerhouse together with all the necessary access, tailrace and ventilation tunnels; and a 50-mile transmission line crossing a 5,500-ft high pass using the largest conductors in electrical history (2.295 in. dia).

• **Incentive contract**—As is customary on work where the isolation and uncertainties dictate handling by just one large contractor, the contract between Alcan and M-K is on a cost-plus-fixed-fee basis. But, incentive features are also included in the agreement that gives a bonus to the contractor if costs are lower than an index amount and assesses a penalty if the reverse is true.

Such cost-plus-fixed-fee-plus-incentive contracts are relatively new but are now being used with some frequency—particularly on work outside the boundaries of the U. S. They seem ideally suited for contracts between two privately owned firms. Such agreements retain all the advantages of CPFF contracts and, by providing an incentive for closer control of costs, overcome one of the most discussed disadvantages.

No set formula can or should be established for the terms of the bonus and penalty clauses. Each job is



THE ALCAN POWER PROJECT is spread over an area 150 miles east and west and 60 miles north and south. Kenney Dam backs up water into a reservoir of seven interconnected lakes that will feed world's largest underground power plant. Power will operate new aluminum plants at Kitimat.

unique in its working conditions. And each owner-contractor relationship is unique. First essential is for both parties to agree without reservation to the index amount or "target" estimate.

The bonus percentage of money saved is usually greater than the penalty percentage. And there is commonly a ceiling on both bonus and penalty.

• **Financing complicated**—The cost of the hydro construction has turned out to be higher than anticipated—mostly due to incomplete design information when original estimates were drawn. This has made more complex the already complicated financing of the development. Since construction programs can be undertaken only to the extent that financing is available, it may be worthwhile to trace the financing of the work to see how the money was raised.

Total cost of the entire first increment of the Kemano-Kitimat project is just under $200 million. But this is not the only development Alcan has underway. And the parent company, Aluminium Ltd., must also assure financing of developments of other subsidiary companies (such as Jamaica Bauxites Ltd. that has a $40 million program underway to develop alumina for further processing at Kitimat). With other current expansions, the construction expenditures now programmed total $390 million—and raising this money constitutes one of the largest private financing operations in recent years.

Alcan is very much a going concern, with 1952 output of aluminum ingot estimated at 496,000 short tons (this compares with U. S. figures of 505,000 tons for Alcoa, 301,000 tons for Reynolds and 250,000 tons for Kaiser—the three largest U. S. firms). So the first source of construction funds is from earned surpluses. A second source of capital is the sale of debentures guaranteed by the parent company; by this means $50 million was raised prior to this year. A third source of capital is direct loans from the British government against future aluminum deliveries. Some $67 million has been advanced or committed in this manner for the present program. Still another source of money is sale of common stock of the parent company. This has developed $30 million.

That was the financial picture when the increased cost of the British Columbia work and other projects was realized earlier this year. It was then apparent that additional funds were needed. With the objective of raising $90 million more, lines of credit were established at four Canadian and two U. S. banks pending arrangements for a second set of sinking fund debentures. These were successfully sold to a U. S. syndicate in May.

All of this demonstrates soundness of the credit position of Alcan and Aluminium, Ltd. It also is testimony to the soundness of the British Columbia project and the firm position aluminum production has in today's international economy. And, further, it is evidence that well based developments can be privately financed even if on a herculean scale.

• **Personnel procurement**—As in most any project in an isolated location, the cost of hiring, transporting and housing workers is high. At Kemano a significant part of this increased cost is due to the so-called "60-day clause" included in some union contracts in British Columbia. The clause provides that after a man has put in 60-days on the job he is entitled to free transportation back to the hiring point—Vancouver in this case. And a goodly number of the workmen take advantage of this prerogative.

All hiring is done through an office in Vancouver that acts on specific requests by crafts from Kemano. During the buildup in 1951, workmen were hired at a rate of close to 100 a day. With the force now relatively stable, the rate is about 200 a week. For the first 14 months of operations the turnover was high, but it is getting lower as the job progresses. At present there are some 4500 workers on the hydroelectric power facilities portions of the job.

A substantial number of people now being hired are "rehires"—that is

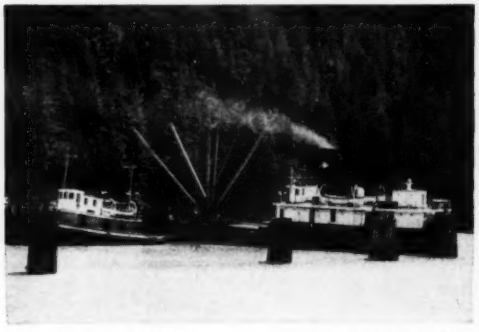
A WORD ABOUT ALCAN

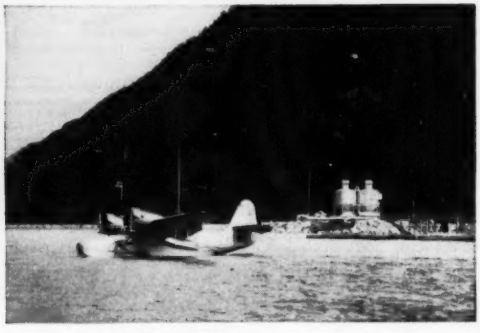
Alcan in this case means the Aluminum Company of Canada, Ltd. It should not be confused with the Alaska-Canada Highway project that ENR readers became familiar with during World War II. It should also not be confused with Alcoa—Aluminum Company of America—for there has been no connection between the two for more than 20 years.

With full completion of the Kitimat-Nechako project, Alcan will be the largest aluminum producer in the world. Present capacity is 496,000 tons of ingot per year including 345,000 tons at its largest smelter at Arvida, Que. Kitimat will add 89,000 short tons capacity in 1954. Schedule of ultimate development of 550,000 short tons per year at Kitimat will depend on future world aluminum market.

MATERIALS have to be stocked . . .

. . . MEN have to be fed even though . . .





. . . SHIPS AND PLANES are the only supply facilities that connect with the outside world.

workmen returning for the second or third time, even though they are not eligible for rehire until a specified time has passed.

M-K maintains a card index on work experience of every man hired. Thus, when a job is open they can tell just which of the men previously employed will best fit it—if he is available. Since the total force of construction workers in the province is about 35,000, this file promises to be a relatively complete record of available building skills by the time the present work is completed.

The personnel staff has recruiters operating all across Canada. For example, experience in underground work in B. C. is limited insofar as large volumes and teamwork procedures are concerned. Result is that a considerable number of this type of workers comes from the mines of northern Ontario. About 60 key supervisory employees have been hired from the U. S.

In the process of transporting workers to Kemano, M-K virtually operates a complete transportation service. It has 60 spaces "block booked" on each of the steamers regularly serving Kemano (Canadian Pacific and Union Steamship Co).

M. K. also uses an average of four chartered float planes a day, weather permitting.

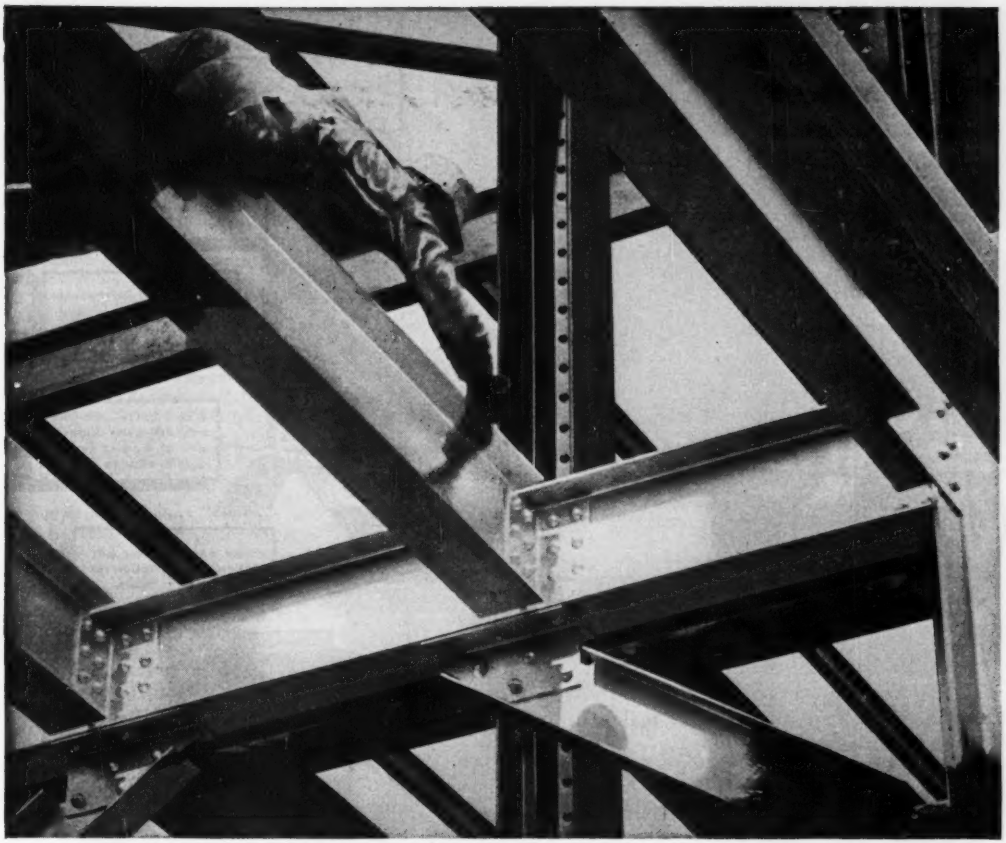
These aircraft carry about six passengers each and usually make a round trip a day.

In spite of the country's unpredictable weather conditions these charter planes, flown by pioneer bush pilots, have a remarkable safety record. All flying is done by pilotage instead of with instruments, but constant radio communications are maintained. Pilots generally fly within emergency reach of the inland waterway steamer route. So, when the clouds close in, they put into the nearest fishing or lumber harbor and wait. If no harbor is near, they have been known to land on the water and taxi for as much as 20 miles looking for clear weather or for a place to tie up until the weather becomes clear.

• **Living at Kemano**—Providing quarters and meals at Kemano is also expensive. It costs M-K more than $5 a day to house and feed each worker, but the fee charged is only $2.50 a day. Meals are substantial, with as much provided as a man can and wants to eat. Quarters at Kemano's main camp are in long huts each partitioned into 29 two-man rooms.

Some housing is available for families—and they are encouraged as a means of getting men to stay on the job longer. A trailer camp has been established, and M-K will ship worker-owned trailers to Kemano for $25. This fee involves a substantial subsidy as actual cost to the contractor is much higher.

The nature of the job has led to the establishment of more than 20 camps—mostly of tents. Some were built for transmission line clearing and for construction of the 10-mile road



Getting the right angle on raw steel

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DULUX primers and topcoats are engineered in Du Pont laboratories to provide the best adhesion and flexibility . . . to battle corrosion from exposure and moisture for years. In fact, on exposed steel surfaces, DULUX performance records show 10-year, 12-year and still longer periods of protective service—service that means substantial dollar savings.

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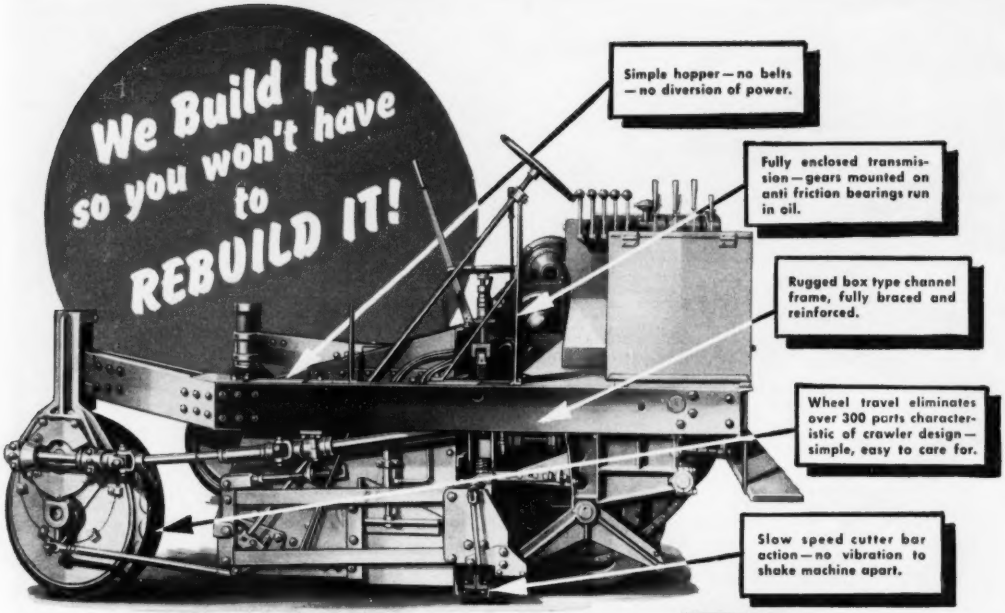
Simple hopper—no belts—no diversion of power.
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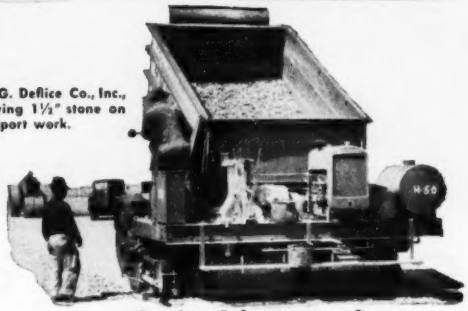
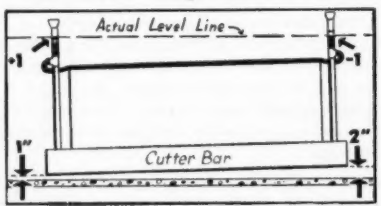
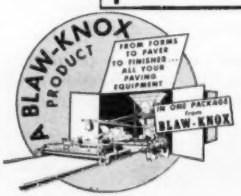


L. G. Deflice Co., Inc., laying 1½" stone on airport work.

Ask About the Adnun Liquid Level





Being the only Black Top Paver with a one piece screed having a direct lift, the Adnun for the first time in the history of black top paving makes possible the holding of a positive level course over old road. The Adnun Liquid Level assures accurate correction for any slope at any station.

between Kemano and Kemano Bay. The road construction tent-camps have already been dismantled. Others are constructed for the short work season in the high elevations of the mountain pass through which the transmission line passes. But many camps are semi-permanent and will be used for the 18-month (or more) construction period.

Reason for the large number of camps on the road and transmission line work is to minimize travel time. But there are also five camps housing underground workers. These include a camp at each end of the 10-mile bore, one at the central adit, one part way up the penstock and the main Kemano camp. All of the satellite underground camps store enough food, supplies and equipment parts in the summer to become self-sufficient during winter periods when road access to the sites become difficult or impossible.

LUMBER MILL at Kemano supplies the needs of the job. Timber comes largely from clearing operations.

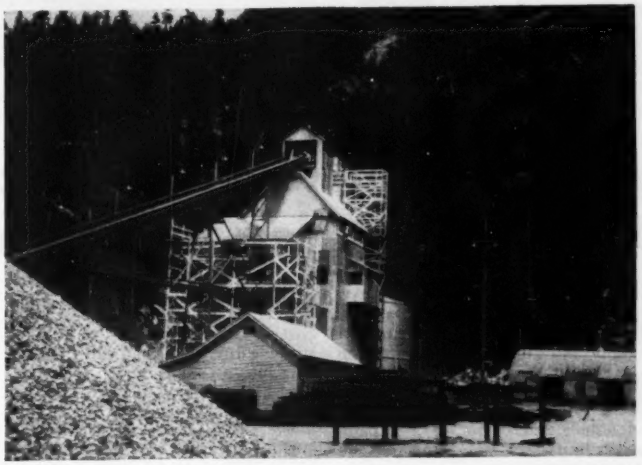
• **Supplying Kemano**—To supply food and materials for the 4,500 workers requires shipment from Vancouver of some 4,000 tons a month. Most of this goes by tug and barge up the inland passage. Some of it goes by the commercial steamers mainly used for personnel transport.

All barge work is on an individual charter basis with each barge normally carrying 200 to 250 tons with a few shipments on a near-fully-loaded 1,000-ton barge. Largest single load so far was 2½ cu yd shovels weighing 75 tons each.

But when the barges get to dock or beaching facilities at Kemano Bay, the material is still 10 miles from the powerhouse. This distance has been spanned by a road involving heavy gravel fills and several first class bridges. Cost of the road has been estimated at $150,000 per mile—justifiable since it will provide permanent access to the powerhouse.

Purchase orders for supplies and equipment are carefully controlled and originate at four sources: Alcan engineers in Montreal design and order the major items of permanent equipment such as transformers, generators, and turbines; British Columbia International Engineering Co, Ltd, designers of the hydro phases of the project, design and purchase auxiliary permanent equipment; Parent company of BCIE, International Engineering Co, Inc, also purchased some construction plant equipment to help get the initial phases of the job started.

But the greatest number of purchase orders emanate from M-K and Alcan at Kemano. They then go to M-K at Vancouver, where orders are screened again by Alcan and finally turned over to expediters.



BATCH PLANT is typical of big installations required for construction operations. It and all other equipment and material except lumber were shipped by barge to Kemano.

Material is accumulated at a waterfront yard in North Vancouver for shipment to the job.

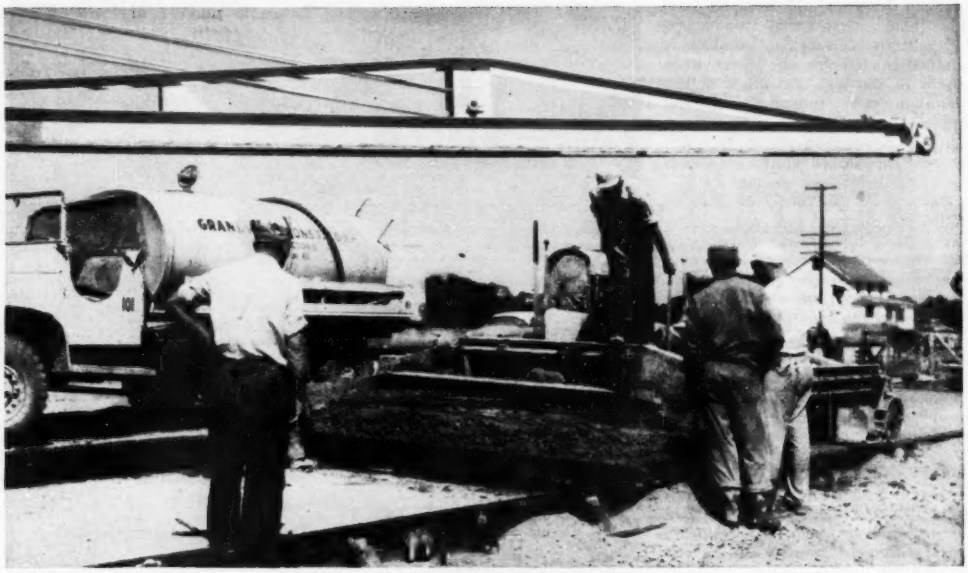
On foodstuffs and routinely required materials about a six to eight weeks supply is kept on hand. These supplies are warehoused at Kemano in large quonset-type buildings for issue as needed.

One manufacturer has found it expedient to establish a warehouse at Kemano—with approval of M-K and Alcan. This supplier, Ingersoll-Rand of Canada, has stocked as much as a quarter million dollars worth of material. Included are carbide bits, compressor and drill parts and impact wrenches.

Most of the lumber for the work is sawed right at Kemano. And a high percentage comes from timber cleared from the transmission line right-of-way. M-K has a subcontract with a private firm—Kemano Timber, Ltd.—set up to do saw mill operations for construction use.

• **Credits**—P. E. Radley is manager of the British Columbia project for Alcan. Assistant manager is Franklin T. Matthias. Karl Roestad is resident engineer at Kemano.

A. O. Strandberg is project manager for Morrison-Knudsen Company of Canada, Ltd. Russell H. Madsen is assistant project manager, W. J. Naef is administrative manager and C. E. Elliott is controller.



PLAIN CONCRETE now being laid on U. S. 22 near Clinton, N. J., is distributed to the full 10-in. depth of the slab by one pass of the spreader. Here the concrete is being placed against the bulkhead at the end of a day's run.

More unreinforced concrete pavement being laid on New Jersey highways

ANOTHER SECTION of unreinforced concrete slab is being laid by the New Jersey State Highway Department on one of its main routes as part of the department's continuing study of the performance of various types of pavement subjected to dense movement of heavily loaded trucks. The pavement has contraction joints but no expansion joints. It will be one of the largest installations of plain concrete pavement without expansion joints laid by the department in recent years.

The new work is on U. S. Highway 22 west of Clinton, where 4.6 miles of two-lane highway are being reconstructed as a four-lane divided highway. It is part of the program for making that route a divided highway from Newark to the Pennsylvania line at Phillipsburg.

The following information on this part of the highway department's extensive pavement studies is based on an interview with Wm. Van Breemen, supervising engineer, Engineering Research & Soils, for the department.

• **Stability a prime factor**—All pavement design studies in New Jersey have been directed toward providing the maximum amount of stability under two controlling factors—a high density of traffic made up in large part of heavily loaded trucks, and many native soils that will "pump" at joints or cracks under even relatively light traffic. This is especially true in the northern part of the state where the greatest concentrations of traffic occur and where residual and glacial soils predominate.

As a result, the subbase as well as the pavement has been the subject of extensive study. These studies have shown that the greater the amount of truck traffic, the greater the need for subbase material of correspondingly higher quality. For this reason the subbase standards now set for the northern section of New Jersey are more exacting than generally in effect in other states.

In general, pavements in southern New Jersey now are constructed on a granular subbase 8 in. thick. In northern New Jersey, the subbase is usually 12 in. thick. It consists of relatively clean granular material, such as bank-run gravel having a low clay content.

• **Normal type of pavement**—Concrete pavements constructed normally by the state highway department contain reinforcing steel, either bar mats or welded-wire fabric, included primarily to prevent detrimental opening of any cracks that may occur. Longitudinal members of bar mats are $\frac{3}{8}$-in. round deformed bars on 7½-in. centers, and longitudinal members in the fabric are 21/64-in. cold-drawn wire on 6-in. centers.

Designs call for slabs not less than 75 and not over 85 ft long. This range in length is permitted to give contractors a wider choice in the purchase of bar mats or fabric. The general practice, however, is to lay slabs 78 ft 2 in. in length.

Expansion joints between slabs have dowels, 16½-in. long on 12-in. centers. In general, they are 1¼-in. solid round bars or 1⅜-in. seamless steel tubing having a wall thickness of $\frac{3}{16}$-in. The sliding portion of each dowel as well as the part in the joint space is encased in a stainless-steel tube to prevent corrosion.

This type of protection for dowels was adopted six years ago after investigation had disclosed that corrosion of dowels may prevent free movement at expansion joints and result in sufficiently high tensile stresses in the pavement to rupture the reinforc-

ing steel at cracks. It adds from 4 to 7 cents per square yard to the cost of pavement.

Slab thicknesses for this normal type of concrete pavement are 9 in. in the southern part of the state and 10 in. in the northern area.

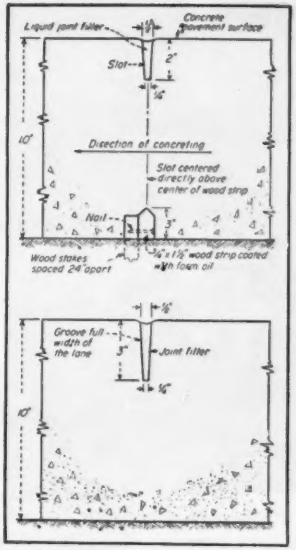
• **Unreinforced pavement studies**—Studies of the possibilities of plain concrete pavements were begun a little over ten years ago with the construction of strips 60 ft long, 12 in. wide, and 8 in. thick. These were laid in a test yard to determine what provisions should be made to insure that cracking would occur only at the contraction joints and that such cracking would occur at all joints at an early stage in the life of the pavement.

Early cracking was held to be desirable for two reasons: (1) To prevent the excessive permanent opening of those joints at which cracking first occurs—which would result if there is infiltration into these joints while in an open condition; (2) To insure that the cracks would develop around the large aggregate—since, as the strength of the concrete increases, the cracks tend to pass directly through the larger aggregate, with resulting loss of interlock.

These studies also showed that contraction joints must be installed at close intervals if the amount of opening is to be kept small enough to avoid the complete loss of aggregate interlock.

• **Fort Dix access roads**—The first plain concrete pavement built to test these conclusions was laid on the Fort Dix access roads during the latter part of 1942 and early in 1943. That pavement was 10 in. thick on 12 in. of compacted granular subbase material. Then, as now, difficulties in obtaining steel for reinforcing and for load-transfer devices at expansion joints were factors in reaching a decision to lay plain concrete.

Expansion joints were included in that pavement—spaced at 105-ft intervals—but they contained no dowels for load transfer. Intermediate contraction joints—also without dowels—were spaced 15 ft apart. Wood fillers were put in all expansion joints. At such joints, the ends of the slabs were supported on unreinforced concrete sills, 4-in. thick. The sills were 5 ft wide (30-in. each side of the joint) and had a length which, in most cases, was equal to the lane width. Load transfer at the contraction joints was entirely dependent upon the degree of aggregate interlock.



CONTRACTION JOINT DETAILS of the unreinforced pavement. The joint arrangement shown in the upper drawing was used in the early installations. On the new work the simplified form shown below is being used.

The contraction joint design called for a wood strip, ¾-in. thick, 1½-in. high, erected transversely on the subgrade, in conjunction with a groove, 2-in. deep, in the upper portion of the pavement, directly over the wood strip.

Gage plugs were installed at a considerable number of the expansion and contraction joints in the Ft. Dix pavements to determine precisely their subsequent changes in width. The original measurements were taken at these plugs just as soon as the concrete had hardened sufficiently to hold the plugs securely in position. Periodic measurements have been taken during the past ten years.

These measurements have shown that there has been a progressive and permanent closure of the expansion joints, and a corresponding increase in the opening of the contraction joints. This action took place during the very early life of the pavement, and now appears to have stopped, since the wood in the expansion joints is now considerably compressed, and resists further compression. Such a condition has been found to be characteristic of later work.

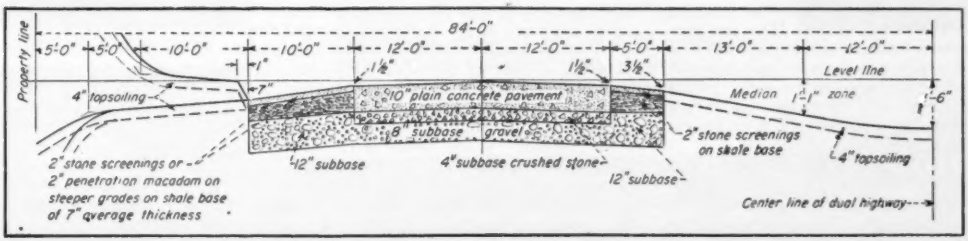
For pavement laid Nov. 4, 1942, measurements on Jan. 23, 1951 (slab temperature 37 deg) showed that the expansion joints (¾-in. wood filler) were an average of 0.212 in. less in width than when constructed—and that the average opening of the intermediate contraction joints was 0.122 in.

For measurements on Aug. 6, 1951 (slab temperature 94 deg), expansion joints were closed an average of 0.303 in. and contraction joints were open an average of 0.060 in.

The Fort Dix access road pavements showed that if the amount of contraction joint opening is to be limited, the pavement must not have expansion joints, at least not at close intervals. That conclusion led to a large reduction in the number of expansion joints in a subsequent installation of plain-concrete pavements and their entire elimination from the most recent work.

Examination of the contraction joints showed that the wood strips in the bottom of the slab were not entirely effective in causing early cracking at all of the contraction joints.

Mr. Van Breemen states that some faulting has occurred at joints in this pavement, but at no point is this drop



HALF CROSS-SECTION OF THE ROADWAY now being built west of Clinton. The plain concrete pavement is supported on an unusually stable subbase 12 in. thick which extends out under the shoulders.

FORMING A CONTRACTION JOINT by pressing down a 3-in. deep plate into the fresh concrete close behind the paver.

across a joint opening more than ¼ in. The faulting is more pronounced at expansion joints.

• **Second installation**—The second installation of plain concrete paving was made in 1946 when adding lanes to N. J. Route 25 where it enters Camden. This was also a 10-in. thick pavement with similar contraction joints and undoweled expansion joints with 1-in. cork fillers.

Contraction joints were spaced at intervals of 17 ft 2 in. to bring every other one of them in line with expansion joints in the old parallel lanes (34 ft 4 in.).

One 2,400-ft section of this pavement had expansion joints spaced at 240 ft, and another section of the same length had no expansion joints. Similarly, one 3,400-ft section was laid without expansion joints and another had them spaced at 343 ft.

• **Rapid change at joints**—A noteworthy development on this project was a rapid closing of the expansion joints and a corresponding opening of contraction joints. The low frictional resistance of the 8-in. sand base on which this pavement was laid may have contributed to the early closure, but there were three other causes that are believed to have been of greater importance. They were:

1. The pavement was constructed during the spring. As a result, its "as constructed" temperature was lower than the temperature it attained during midsummer of the very same year. Consequently, the pavement expanded to greater than its "as constructed" length within a few weeks after construction.

2. The expansion joints were spaced at long intervals (240 and 343 ft). Consequently, a small amount of expansion, per unit of length, resulted in considerable expansion-joint closure.

3. The expansion-joint filler consisted of one-inch cork. As is well known, cork offers very little resistance to compression.

The amount of contraction-joint opening was very erratic. Moreover, even in sections without expansion joints the opening at some contraction joints was great enough to make interlock ineffectual. There has, however, been no serious amount of faulting at joints.

• **Contraction joints changed**—A third installation of this type of pavement was made in 1949 on N. J. Route 25, one of the state's most heavily traveled truck routes. It is noteworthy chiefly due to a change in the design of contraction joints and entire elimination of expansion joints.

This pavement is 10 in. thick laid on 12 in. of granular subbase material, which in turn was placed on 6 in. of selected subgrade material.

Contraction joints have a 3½-in. deep surface groove and no wood strip at the bottom. Wood strips were abandoned because they were not sufficiently effective in causing early cracking at the contraction joints to justify the expense of installation. Also, in laying earlier pavements of this type, considerable difficulty had been experienced in positioning the surface grooves directly over the wood strips.

Readings at gage plugs set in this pavement show that, on the average, contraction joints are open about 0.08 in. in cold weather. During hot weather they close to 0.015. There has been no cracking between contraction joints, and practically no faulting at joints is apparent despite the heavy truck traffic.

• **New work on U. S. 22**—The current work on U. S. 22 near Clinton is noteworthy for the more stable subbase on which the plain concrete pavement is being laid. The pavement, as in the other installations, is 10 in. thick, without expansion joints, and with undowelled contraction joints spaced at 15-ft intervals.

Because the work at Clinton is partly adding new lanes roughly parallel to an existing two-lane pavement and partly relocation, the longest stretch of pavement without expansion joints will be a little over 2 miles in the total distance of 4.6 miles of new work.

• **Subbase "beefed up"**—The subbase is a two-layer system. Material in upper 4 in. is so graded that all will pass a 4-in. sieve, and no more than 50 percent will pass a ¾-in. sieve. The clutriable content is limited to a maximum of 12 percent. This upper 4 in. layer is of broken stone containing sufficient fine stone and screenings to completely fill all voids.

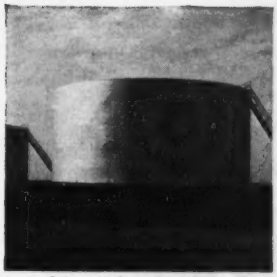
Material in lower 8 in. is of bank-run gravel containing not more than 5 percent of material removable by clutriation.

This bottom course of the subbase is spread across the entire width of the grade, under both the shoulders and the roadway, and compacted to a depth of 8 in. The the 4 in. of crushed rock material is spread across the pavement area and rolled.

Compaction is by not less than five passes of pneumatic-tire rollers or other equipment developing a wheel loading of not less than 8 tons on a width of tire of not more than 24 in.

In explanation of this upgrading of the subbase, Mr. Van Breemen says that measurements taken on the earlier projects where plain concrete has been laid indicate that even with contraction joints spaced at 15-ft intervals those joints are open during the winter in such an amount as to make it highly doubtful that there is effective load transfer through aggregate interlock. As already indicated, these joints will be open approximately 0.08 in. during cold weather.

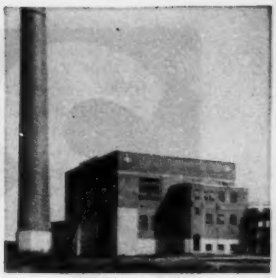
In view of the very likely absence of effective load transfer, and the heavy trucking on this highway, the



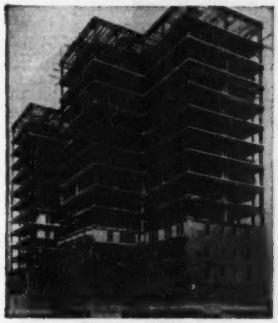
Oil and Gasoline Tanks

Bins

Elevated Tanks



Incinerators

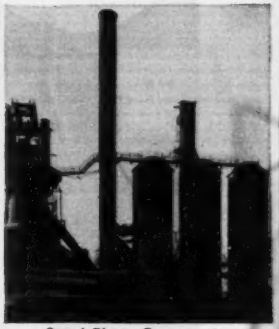


Structural Steel

Designers

Fabricators

Erectors



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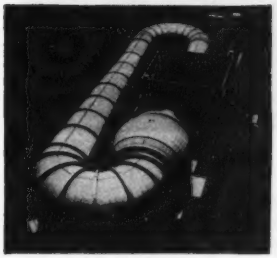

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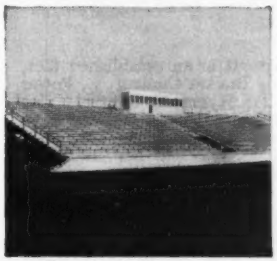
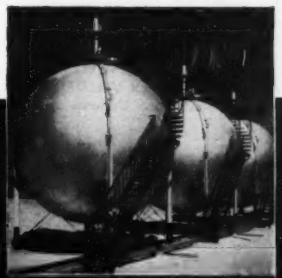
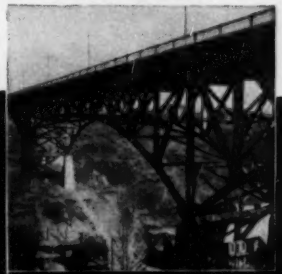


Steel Deck Grandstands

Steel Reservoirs



Spheres



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objective has been to make up for this structural deficiency by "beefing-up" the subgrade to the extent that it in itself will be capable of preventing faulting, even in the event of complete absence of load transfer.

• **Joint design modified**—The wooden base strip has been eliminated on this new work, due to the construction difficulties previously noted, and the surface groove is required to be 3 in. deep. It is formed by pressing a 3-in. deep plate into the fresh concrete at 15-ft intervals.

At the start of the laying of the pavement, it was the practice to lift this plate a little soon after it had been pressed down into the fresh concrete. But after some pavement had been laid, it was found that the grooves were not the full 3-in. depth called for in the specifications. Apparently, concrete had slumped into the groove as the plate was lifted.

Current practice is to wait longer to raise the plate and then to raise only one end. Later, when the plate is lifted out completely, a short plate is used to reform the groove under the lifted end if it is found to be less than 3 in. deep.

In general, cracks have developed quickly at these formed contraction joints. The few that did not occur at joints were near the joints in which the groove was less than 3-in. deep.

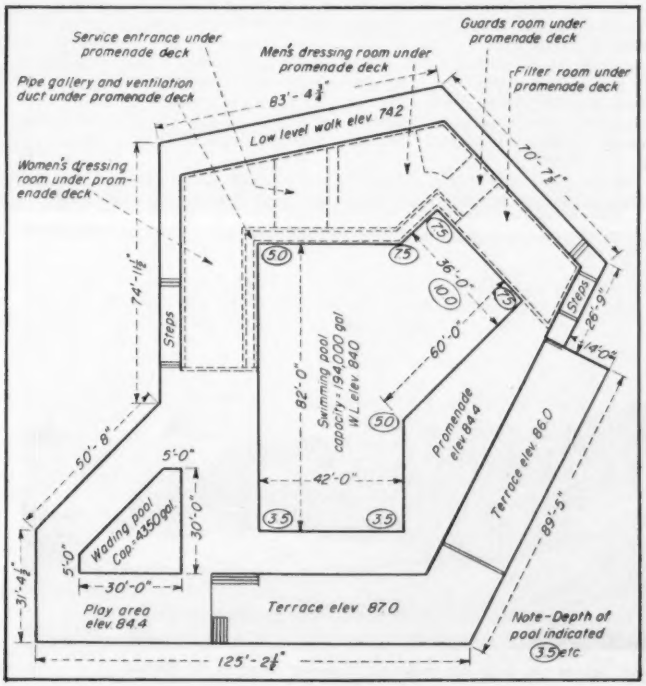
• **Dowels across construction joints**—At the end of each day's run, a plank bulkhead is set between the forms about 7½ ft from the last contraction joint. Through holes at 12-in. centers along the center of this plank are placed ¾-in. deformed bars, 3 ft long, which project for half their length into the fresh concrete. When the next day's work is started, the plank is slipped off the projecting ends of the bars before concrete is placed. Being deformed, these bars check any tendency for this construction joint to open at some later date; they also serve to transfer load across the construction joint.

This new work on U. S. 22 near Clinton, N. J., is being carried out under the direction of Ransford J. Abbott, commissioner; E. W. Kilpatrick, state highway engineer; and H. D. Robbins, supervising engineer, construction division. Emile C. Benoist is resident engineer. The construction contract is held by the Grandview Const. Corp. of Mt. Vernon, N. Y.

Side-hill swimming pool puts services in substructure

DRESSING ROOMS, service area and filter room are all beneath promenade decks of a hillside swimming pool being built in suburban Philadelphia. Objective of this somewhat novel arrangement of facilities is to preserve Huntingdon Valley Country Club's view of its golf course.

All pool facilities and operating areas are beneath the promenade at the pool's deep end. Wide stairways lead down from the deck. To avoid excessive condensation in the dressing rooms and adjacent lower level areas, a pipe gallery has been located to separate these areas from walls of the pool. Within this gallery will be placed filtered water inlets, vacuum cleaning piping and part of the scum-gutter drain piping.



Access to the pipe gallery is through the life guard's room, which adjoins the men's dressing room on one side and the filter room on the other.

Water treatment equipment consists of two diatomaceous earth filters, a recirculating pump, a small holding pump for night operation, a makeup tank, slurry agitator, hypochlorite tank, a duplex feeder for slurry and hypochlorite, a hair catcher, and flow control valves.

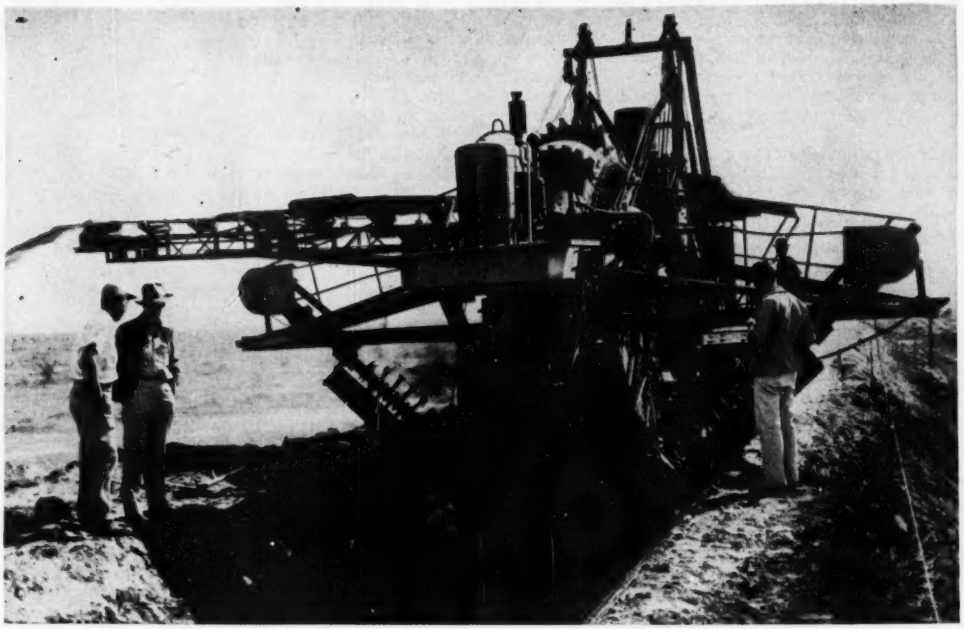
The pool itself is an 82 x 42-ft rectangle with 45-deg dogleg to a diving area at its deep end. Depth varies from 3½ to 5 ft in the main portion; 10 ft below the diving boards. Near the pool's shallow end is a roughly triangular wading pool 8 to 20 in. deep.

All promenade deck is concrete slab with surfaces scored to relieve bare appearance. Deck and adjoining terraces are flood-lit by fixtures on ornamental aluminum standards.

Underdrainage for terraces, decks and the pool itself take advantage of the sloping topography.

Total cost will be $102,491. This breaks down to a $65,000 general contract with Frank V. Radomski and Son, Inc.; $30,000 mechanical, plumbing and ventilating, Benjamin Lessner Co, Inc.; $7,491 electrical, Reese Electric Co.

Design was by George B. Mebus, consulting engineer of Glenside, Pa., with architectural assistance from Berninger, Haag and d'Entremont, Jenkintown, Pa.



Capable of doing double the work of a small dragline and 40 laborers, this . . .

Novel ditcher digs Texas canals

WHEN AN ENTERPRISING Texas contractor took on the construction of 20 miles of irrigation canals in the Rio Grande Valley last December, he didn't rush into it. First thing he did was design and build a special ditcher that excavates 90 ft of canal per hour. It also trims side slopes as it goes.

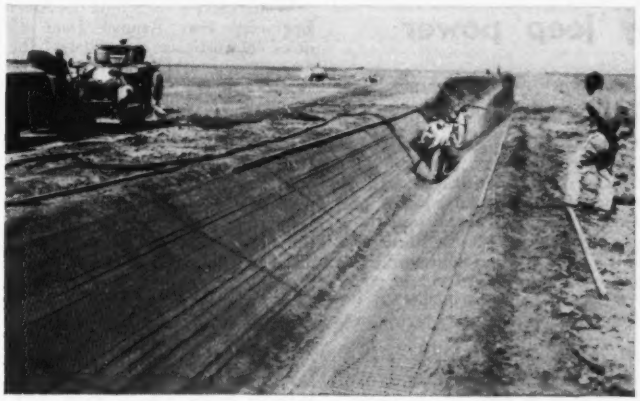
In developing the unit, contractor F. M. Reising, of the Reising Construction Co., Edinburg, Tex., started with a conventional ditcher. He mounted two adjustable cutter wings on the sides, powered by a 32-hp gasoline engine. These winged cutter bars slice through the earth, leaving a smooth V-shaped ditch, ready for gunite concreting.

When completed this fall, the 20 miles of canal, together with 100 miles of 12- to 30-in. concrete pipe lines, will serve a 31,350-acre citrus-growing irrigation project near Edinburg, in the lower tip of Texas. The $1.5-million project is being built for the Hidalgo County Water Control and Improvement District No. 15.

• **Design flow 266 cfs**—Largest canal in the system is eight miles long, 23-

EARTH MOVING EQUIPMENT builds canal right-of-way to proper grade and alignment ahead of the ditcher.

DITCH SIDE SLOPES are checked by template prior to installing wire-mesh reinforcement for concrete lining



GUNITE CONCRETE lines the canals to waterproof them and improve flow.

ft wide at the rim and 10 ft wide at the bottom. It will carry six ft of water at the rate of 266 cfs. It feeds 12 miles of smaller canals.

As in all canal work in that part of the country, the contractor's chief objective was to perfect a smooth-working, mechanized operation requiring a minimum of labor. According to Reising, this special ditcher does just that. He reports that the rig does double the work of a small dragline and 40 laborers.

The ditcher can't do it all, however. The canal right-of-way first has to be brought to proper grade for gravity flow of the irrigation water. In this work, conventional earth-moving equipment such as bulldozers, scrapers, motor graders, and sheepsfoot rollers make the cuts and fills.

The ditcher follows next, completing an average of 800 ft of ditch in a nine-hr day.

• **Gunite concrete waterproofing**—Once the canal sides are cut and graded, wire mesh is laid along the sides and gunite concrete sprayed on to make a waterproof lining. The gunite work is handled by the water district.

Conventional ditchers are used in constructing the 100 miles of concrete pipe line, forming the remainder of the project. The trenches are backfilled by tractor and bulldozer blade. Pipe line construction averages 2,000 ft completed in a nine-hr day.

Information for this story, and all photographs, were furnished by the International Harvester Co.

Tests to be finished soon on sewage disposal at sea

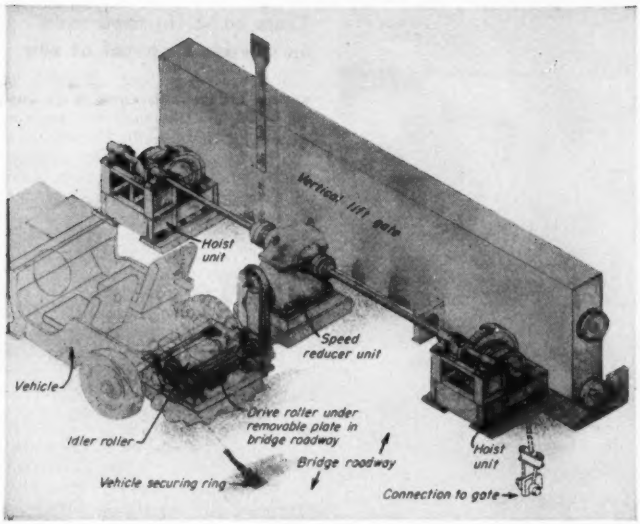
Sea water sampling off-shore at sewage outfalls is expected to be correlated within the next few months with model tests by the County Sanitary Districts of Los Angeles County, Calif. Findings from the correlation should clarify phenomena of sewage disposal at sea.

For the past eighteen years, excepting three war years, the County Sanitary Districts of Los Angeles County have conducted weekly surveys of the ocean waters in the vicinity of White's Point Ocean Outfall: a submarine outfall located some two miles upcoast from Point Fermin, furthest extension of the San Pedro coastline. Comprising two flexibly articulated pipes placed on the ocean's floor, 5 and 6 ft in diameter, the outfall is now discharging 150mgd of primary treated sewage effluent 5,000 ft off-shore at a depth of 110 ft (ENR March 4, 1948, vol. p. 368).

The present sampling procedure at the White's Point Outfall divides itself into two phases: (1) determining shore-line bacteriological activity to protect the shore line from pollution and (2) offshore sampling to determine the factors which influence the spread and dilution of the sewage field. Bacteriological samples are taken at shore stations and at points 1,000 ft to a half mile off-shore from ten stations covering a shore-line distance of about ten miles. The coliform count is obtained by standard lactose fermentation procedures in which a "most probable number" of organisms is determined, and by use of the recently developed molecular filter technique which provides a direct plate count.

To observe the ocean environment, the vertical temperature distribution is measured at 10-ft intervals of depth every 1,000 ft along the line of the ocean outfall, extending to a maximum of 10,000 ft from the shore. Temperatures are measured in the morning and in the afternoon of the day on which bacteriological samples are taken. On occasion, measurements of the salinity at various depths are made to determine if any significant changes in salinity exist. Total chlorides and ammonia content are determined on samples taken directly from the center of the rising column to indicate the initial dilution of the sewage as it breaks the ocean surface.

Surface, 5- and 10-ft depth floats are placed down-current from the sewage field and 20 minute readings are taken to determine the morning and afternoon ocean currents at these various levels. Observations are made of the wind direction and velocity by a pressure plate anemometer.



Canal gates raised by 'jeep' power

A new method of supplying power to canal gates is to be used at gates structures now being built by the Central and Southern Florida Flood-Control District. By means of a drive mechanism set below the roadway of the deck of the bridge supporting the gates, power for operating the gates can be supplied by any one of the "jeeps" used by the district's operating crews.

The first of these drive units is being installed at a gate structure known as S-29, in a northern suburb of Miami where Snake Creek Canal flows into the Oleta River. The gate will be used for both flood control and to prevent the intrusion of salt water into the canal system at time of low water in the canal or storm tides off Miami.

• **Others slated**—Numerous structures similar to S-29 are to be built by the flood-control district. Most of them will be at sites where electric power is not available or is not dependable because it might be put out of service by a hurricane at a time when operation of the gate would be most urgent.

Manual operation would be slow and laborious as the gates are large and heavy. Portable gasoline-driven power units were not considered practicable because of their limited power and frequent difficulties in starting such units.

Because of the large size of the district, several motor vehicles will be needed at all times by the operating and maintenance crews, hence motor vehicles always will be available.

• **Interconnection**—As will be seen in the accompanying drawings, the hoist mechanism for each gate will be connected to a speed-reducing unit which in turn will be connected to a pair of rollers set in a recess below the bridge deck. To operate the gate, this recess will be uncovered and the power vehicle will be so positioned on the deck that one of its rear drive wheels will rest on the rollers. Before starting the motor, the vehicle will be secured in position by a chain hooked to a ring in the floor.

With the car in low gear, the gate can be raised or lowered at a rate of 2 ft per min., corresponding to an engine speed of 1,200 rpm.

When the gate approaches full open or close, a mechanically actuated gong sounds. The vehicle is slowed down and the gate is eased into its final position. Then the roller brake is reset, the vehicle is driven off the rollers, and the cover is closed and locked.

In addition to the gong, two other safety devices are provided to prevent the operator from raising the gates too high. One is a position indicator and the other a torque limiter in the drive system.

• **Locks itself**—The worm-gear reducer has a self-locking feature which will hold the gate in any raised position. A removable handwheel to fit the input shaft of the reducer is provided for emergency manual operation.

This method of using automotive power to operate the gates was suggested by Hubert P. Stockwell, mechanical engineer in the office of the district engineer, Corps of Engineers, Jacksonville, Fla.

A contract for construction of gate structure S-29 has been awarded to the Reed Construction Co. of Miami Beach. It is expected that the structure will be put in operation by November, 1953.

Two bridges to form 'Siamese' structure

Two narrow bridges of the Model T era soon will be combined into a single major crossing of the Missouri River at Chamberlain, S. D.

Existing bridges at Wheeler and at Chamberlain, both 20½ ft wide, will be placed side by side on new piers. The result will be a 2,004-ft-long structure providing two lanes of traffic in both directions.

Water backing up behind the Army Engineers' Fort Randall Dam 85 miles downstream necessitates the new crossing at Chamberlain. The Wheeler bridge, which now carries Highways 16 and 47, will be under 50 ft of water. The present Chamberlain bridge, which is traversed by Highways 18 and 281, would be almost awash, while its approach will be completely covered.

The Omaha District office of Army Engineers and South Dakota highway officials, planned the Chamberlain crossing.

• **Tricky job**—Getting the two bridges to their new location promises to be involved. The Chamberlain bridge has four spans 336 ft in length. The Wheeler bridge has six spans, each 256 ft long.

The technique of removal was sketched by Edward T. Foster of Foster-Smetana Co., Omaha. In combination with Guy James Construction Co. of Oklahoma City, Mr. Foster's firm submitted the approved low bid of $1,285,832.

The Wheeler bridge will be disassembled, hauled the 59 highway miles to the new site, and re-erected. Decision on the Chamberlain bridge has not been made, but it may be floated, a span at a time, to the new site 1000 ft downstream. The specifications give the contractor the alternative of disassembly or floating the bridges in place. Status of the water in the Randall reservoir will be the deciding factor, Mr. Foster said.

Work on the bridge may be started this fall. Completion is scheduled for Jan. 1, 1954.

SANTA CLAUS

Could Die of Old Age

No one shoots Santa Claus. This remark about a government which spends and spends and spends may well be true. But it is also true that Santa Claus is an old man. At his age overwork might well kill him.

It is with the possibility of working Santa Claus to death that this editorial is concerned. No position is taken as between the contending political parties in the present campaign. Our concern is with the problem of protecting Santa Claus.

It is true that as a nation we now enjoy great prosperity. The prosperity is not nearly so general as the political advertisements of it would suggest. Millions of individuals, notably those living on pensions, annuities and other fixed incomes, have been robbed of half their purchasing power by inflation during recent years, and whole industries know little or nothing of boom times.

However, measured by so basic a gauge as unemployment, we do have great prosperity. Less than two million of our total working force of over 64 million are unemployed, and many of them are unemployed only while moving from one job to another. The real income, i.e., what their dollars will buy, of those with jobs is somewhere near its all-time peak.

Our Prosperity is Precarious

The prosperity we enjoy, however, is precarious. This is primarily because it is dependent upon a rising volume of expenditures by the federal government. At present almost a quarter of our entire national income is ladled out through Washington, and in an ever increasing amount.

If, as matters now stand, federal expenditures were to be suddenly and sharply cut, our government-financed prosperity would be severely upset. But if the federal government were to try to keep right on providing prosperity by steadily increasing its expenditures, the end result would be more certainly disastrous. It would be a crash caused primarily by having continuing inflation of prices destroy the value of the dollar.

Higher government expenditures of worthless dollars then could accomplish nothing. Santa Claus would be dead from overwork.

To Provide Firm Foundations

The general route to be followed in putting firm foundations under our prosperity is quite clear. It involves two steps which must be taken closely together. The first is to stop the continuous increase in federal expenditures. The second step is to substitute expanding private business for government-financed business as the principal foundation of expanding prosperity.

The increase in federal expenditures can be stopped without sacrificing any effective measures now directed toward meeting our top priority requirement—protection from armed Communist aggression. The most competent authorities of both major parties agree it can be done by (1) better planning of and the elimination of outright waste in defense arrangements, and (2) cutting those civilian expenditures which cannot be justified at the same time we are undertaking a great new load of defense expenditure.

It is also possible to substitute expanding private business for government-financed business. The problem is primarily that of relieving private business of the staggering load of federal taxation it now is carrying. Federal taxation now takes 52 per cent of all corporate profits and 82 per cent of all so-called excess profits. If it were not for the forced draft placed under our economy by rapidly mounting defense expenditures, this burden would surely lay a disastrous blight on private business expansion. If expanding private business is to have a chance to play its critical role as a substitute for government-financed business, its taxes must be cut, and soon.

It Won't be Easy

It would be naive to contend that it will be easy to check the expansion of federal expenditures. They have been running wild too long, and in the process contributing to a feverish, inflationary prosperity. Likewise, there is no reason to believe that the easing of the load of business taxes is going to be easy. The basic blight it puts on business expansion has been too long obscured by having our economy dosed with artificial stimulants, most notably enormous injections of federal expenditures.

The Key Question—How Long?

It is obvious that prosperity is going to be a major topic of discussion in the present political campaign. There is nothing the matter with that. Prosperity is a key concern of the voters in choosing a national administration.

To make the discussion of prosperity really useful, however, it is important to ask and get answers to the right questions about it. The key question is not whether or not we have prosperity. That we have it in large measure is generally conceded.

The key question is, "How long can we continue to have prosperity?" The answer—not very long if we continue to rely primarily on new injections of inflationary federal expenditures. Santa Claus, be it remembered, is no youngster. If we continue our present improvident course, he will be worked to death. Those politicians, regardless of party, who see this clear danger and who have plans to escape it are facing up to the crucial question about our prosperity.

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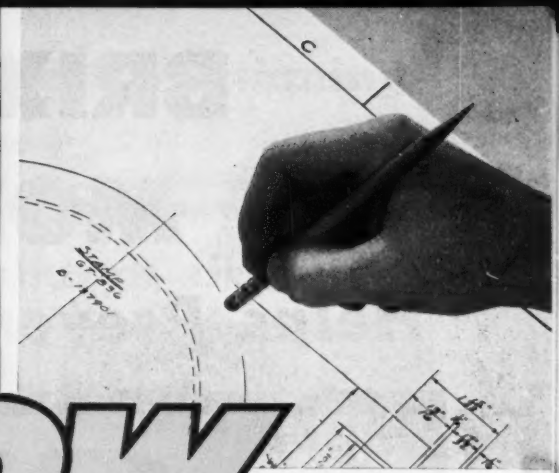

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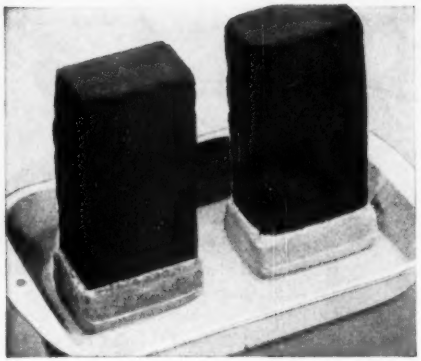
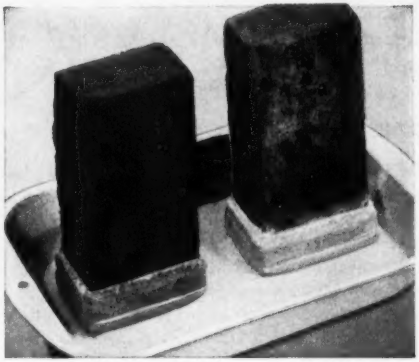


To test two mortars for resistance to efflorescence, "cap" two brick heavily with the mortars—let harden, and



keep both brick for a few weeks in a shallow pan of water, as shown. Try this with Brixment mortar!

HERE'S WHAT CAUSES EFFLORESCENCE—AND WHY BRIXMENT MORTAR HELPS CONTROL IT

Efflorescence is an outcropping of minute white crystals on brickwork. When these crystals occur on colored mortar joints, the condition is sometimes mistaken for *fading*.

Efflorescence is caused by the presence of soluble salts in masonry materials. When reached by water, these salts dissolve, and are drawn by evaporation to the surface of the wall. Brixment itself *does not cause efflorescence* because it is practically free from soluble salts. Even when such salts are present in the sand or brick, the air-entraining and waterproofing agent in Brixment usually *prevents them from coming to the surface.*

Bricklayers who have used Brixment mortar for years say they have far less efflorescence with Brixment than with any other mortar.

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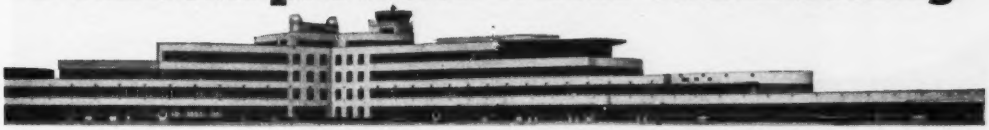

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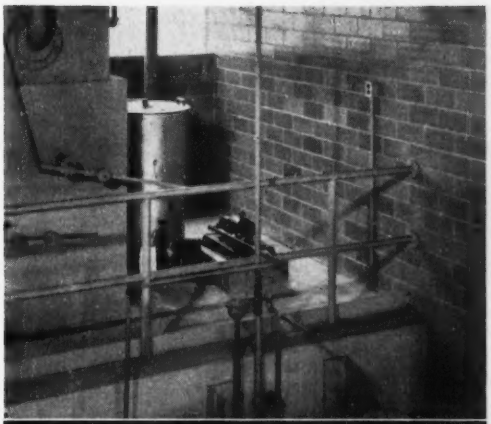

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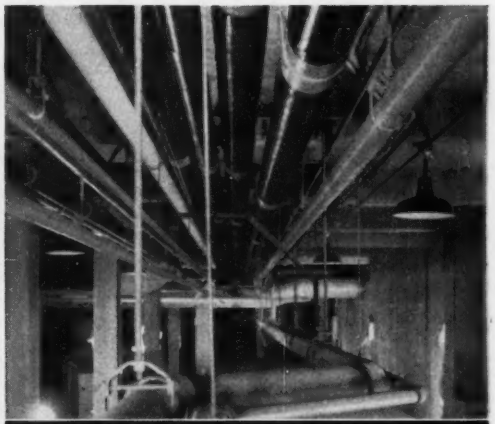

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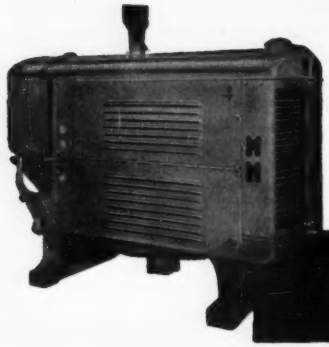

Ol' Man River's Punch was met with preparedness when flood threatened devastation to Omaha's industrial area. The city's disaster committee made arrangements for moving of equipment to minimize loss. MM powered American Cranes were called into service and "not a single American Crane, working around the clock, had to stop or slow down for any reason."

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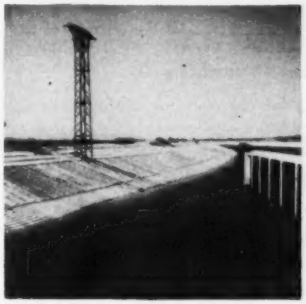
Vacuum concrete revetment used to line French canal

MADE in a casting yard, articulated revetment units are processed by vacuum mats, then . . .

PLACED, two at a time, in the canal bank by a vacuum lifter called an "Octopus", to provide . . .



COMPLETED revetment for the variable-water-level portion of the Donzere-Mondragon Canal.

Seven of the 17 miles of the navigation and power canal of France's great Donzere-Mondragon project on the Rhone River (ENR Nov. 22, 1951 p 30) are being lined with articulated concrete revetment units similar to those used in places along the lower Mississippi River. The stretch where this special erosion protection is required is below the power house and lock where variations in water level will be frequent. In the 10 miles above the power house, where water level will remain substantially constant, bituminous and soil cement linings have been used.

The articulated revetment units are made by the vacuum concrete process, and vacuum lifters are also used to move the completed units in the casting yard as well as to place them on the canal bank.

The program involves the manufacture and placing of about four million sq ft of revetment on canal banks with a 3:1 slope and partly under water. Each revetment unit is 3 x 24 ft and made up of 22 3½-in.-thick blocks strung together on three ⅜-in.-diam wires. Two similar wires, placed transversely in each block, are used to tie adjacent revetment units together.

The blocks at Donzere-Mondragon are made with double-bevel edges to improve the articulation or flexibility of the units over that attained with the straight edges used on most of the Mississippi River revetment. Although the double-bevel or "V-type mats", were developed by the Memphis District of the Corps of Engineers, they never have been used extensively in the United States.

• **Making the units**—The revetment units are poured on concrete casting beds in a yard adjacent to the canal bank. The side form for each unit is a concrete curb as shown in the accompanying sketch. The lower bevel or V-shape on the units is formed by steel angles set in the casting bed, while the upper bevel results from similar angles attached to the bottom of the vacuum processing mat.

As soon as the concrete is placed it is struck off flush with the side forms by a vibrating screed. The semi-rigid vacuum mat is then placed on top, and vibrators fixed on its frame force the protruding steel angles into

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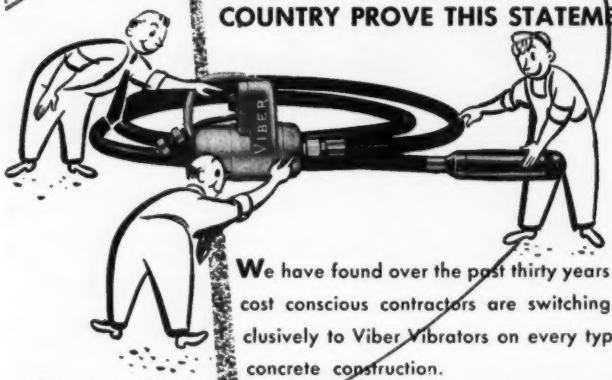

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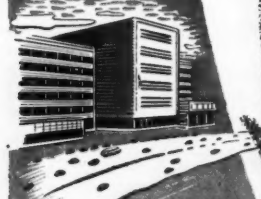

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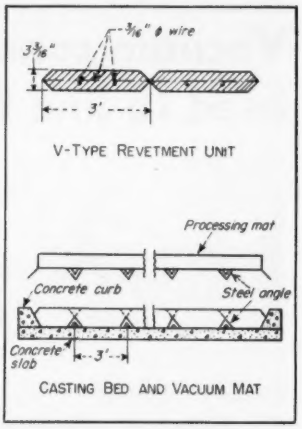

IN CASTING the revetment units the double-bevel edges are formed by steel angles attached to both the casting bed and the vacuum processing mat.

the fresh concrete. The vacuum is then turned on, compressing and dewatering the concrete for about eight min. There are 120 casting beds in the yard, which requires the use of three vacuum mats to attain a daily output of 100 to 120 units of 22 blocks each.

The units remain in the casting beds for 16 hr, and then are moved to stock piles where they remain for an additional seven days. The moving is accomplished by a vacuum lifter, called an "octopus", which is merely a variation of the normal vacuum mat. All handling of the flexible revetment units—from the stock piles to barges and then onto the canal bank—is done by octopus lifters.

• **Placing the units**—The floating derrick that transfers the units from the barges onto the bank is equipped with a double size (3x48 ft) lifter so that two units can be handled at a time. No difficulty was experienced in operating the lifter under water when required, the only precaution being the use of a "water separator" at the top of the derrick to protect the vacuum pumps, which are designed to operate in a dry atmosphere. The water sucked in by the lifter when it is below the surface of the canal comes up to this separator and flows back without entering the pump.

The work is being done by the Societe du Vacuum Concrete, Paris, of which I. Leviant is general manager and E. de la Sayette, head engineer.

Lithographed on stone for U. S. Pipe and Foundry Co. by John A. Noble, A.N.A.

THIS RURAL SCENE is not an unusual background for cast iron pipe. The installation might be a water supply line for a city nearby. It could be a sewer force main leading to a treatment plant. Also it might be a gas transmission line for a city, in which case it would unquestionably be of the mechanical joint type.

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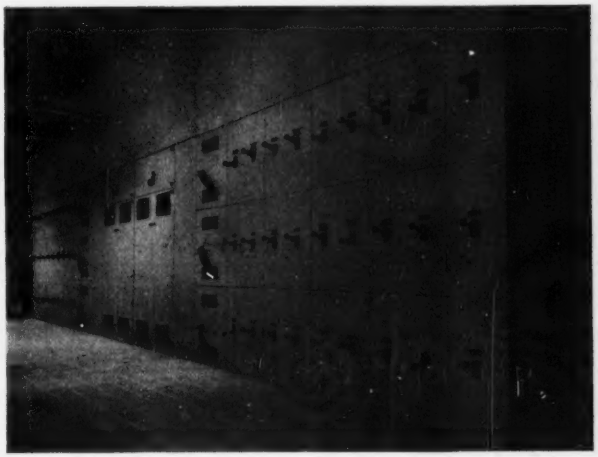
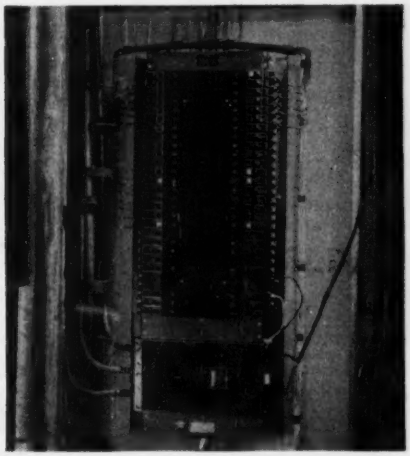


Westinghouse Standard Building-Type, Metal-Enclosed, Dead-Front Switchboard has full-length pull box at top. This permits neat arrangement of the many large conduits.



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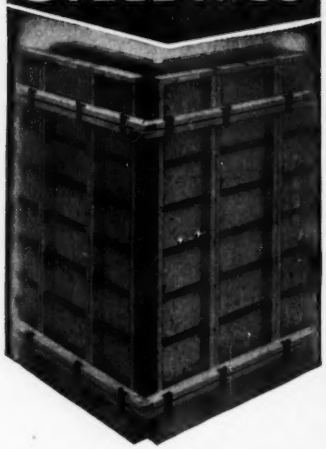

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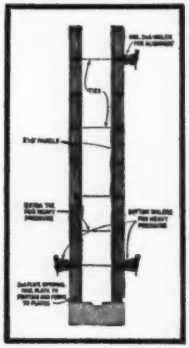

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JOURNEYMEN in fact as well as in name are the Hamburger Zimmermen, journeymen carpenters who travel through Germany serving their advance apprenticeship.

German construction: American view

Many Americans observing German construction jobs are staggered by the amount of hand labor used almost every step of the way. In postwar Germany, capital for construction machinery and equipment is scarce and interest rates are almost usurious. Contractors, having experienced two major wars and the complete economic destruction of their country, are wary of investing money in machinery and equipment.

German contractors are not ignorant of the value of mechanized construction, but there are many—and for them amply justified—reasons for not changing their method of operation.

Manpower is plentiful and cheap. It requires no capital investment. When it is lost, the contractor can get more. When it doesn't work, the contractor takes no loss, for he has nothing invested in it.

Even on such modern construction

These observations on construction in postwar Germany are made by Lt. Col. Robert E. Snetzer, U. S. Corps of Engineers, who formerly was Area Construction Engineer in Baumholder, Germany. During the last year of his 3½-year tour of duty in Germany, Colonel Snetzer was in charge of a large project that had a minimum of American influence, and therefore was accomplished in accordance with the traditional German methods and ideas, modified only by postwar conditions in the country. Heeding various construction factors like bidding job organization, and attitude toward work, Colonel Snetzer tried to undertake the contrasts with American methods, rather than to write off those contrasts as merely old-fashioned and foreign.

FAST WORK is made of this trench, thanks to the high manpower factor that is typical in German construction.

as long-span pre-stressed beams, the only piece of mechanical equipment used is the concrete mixer. High tensile strength steel reinforcing is stressed by hand-operated hydraulic jacks. The completed beams are raised by hand-operated winches and moved the length of the building by hand. Forms, concrete buckets and precast roof slabs are raised by hand-operated cranes.

• **Productivity**—The German laborer works at a leisurely pace, but he puts in long, hard hours. Work normally begins at 7 A. M., the workmen having left their distant homes as early as five. At nine comes the traditional second breakfast of black bread and butter, wurst and cheese. Following this half-hour period, work proceeds until the noon lunch hour. Then more black bread and butter, wurst and cheese, a hot dish—and beer. German workmen must have beer on the job or they will not work—it's no luxury but an integral part of their daily meals.

• **Pay determination**—German laborers often work until 10 P. M., in the summer, but with short winter days, it is usually too dark to accomplish much after 6 o'clock. Wage rates for overtime hours are adjusted above the normal wage rate. Separation allowances, distance from the working site to the nearest town, relative cost of

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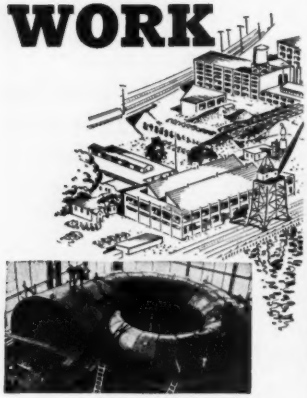

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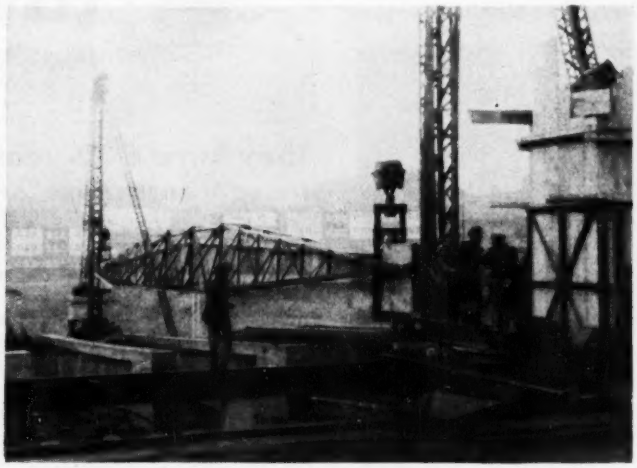

HAND-POWER preference extends to job equipment. Here a hand-operated winch raises 30-ton prestressed concrete beam for installation.

living in the area, number of children, age of workmen and years of experience are all considered in a complicated wage rate structure that is regulated by the government.

• **Tools crude**—Most hand tools used by German labor are poor. Hand saws used in Germany for finish carpentry work are similar to the American buck saw. The carpenter's plane is a wooden block type with steel blade. Hammers which resemble a small machinist's sledge are anything but well-balanced.

In the steamfitting and plumbing trades, the welding torch has become one of the most common tools. Few pipe connections are threaded. Elbows, tees and nipples are made up with the torch.

Practically all reinforcing steel is delivered to the job site in stock sizes and lengths—cutting and bending is done on the job.

• **Traditions**—Several of the old-time building traditions are still observed by the German workmen. A fir tree topping a building under construction signifies that the shell has been completed and the highest member erected, occasioning the "Richtfest," a ceremony and party given by the building's owner.

The "Hamburger Zimmermen" are among the most colorful of the building trades traditions. These journeymen carpenters, garbed in black velvet-like bell-bottom trousers, pearl-buttoned vests and wide-brim hats, travel from job to job for two years or more as a form of advance apprenticeship, carrying their tools over their shoulders in traditionally-tied neckerchiefs.

• **Separate contracts**—Differing from American procedures, the German general contractor builds only the shell of the building. When the earthwork, concrete and masonry are finished, separate contracts for each of the other operations are let by the owner's representative. Seldom does the general contractor take the entire job and sub-let installation work to special contractors. Present tax regulations in Germany support this method, for 4% turnover tax is required each time a portion of the work is sub-let to another contractor.

However, under the German system, there is little inducement for contractors to cooperate to coordinate the various types of work. The first contractor completes his general work without regard for pipe channels, holes in the floors for other installations, or future use of scaffolding.

• **Contractors design, too**—Under German regulations, the building contractor is responsible for the adequacy of construction no matter how it was designed. It is the builder, not the architect or designer, who must carry the final responsibility for the building design.

Under these same regulations, the contractor is responsible for the correction of all deficiencies in his construction for a period of at least two years. For this reason, German contracting firms do more engineering for

(Continued on page 62)

Consolidated Products gets 75 tons of fine, dry sand hourly with self-loading Tournapull, 35 tons with old method

At Whittier Narrows Dam, on the San Gabriel River near El Monte, California, Consolidated Rock Products Co. of Los Angeles took the contract to produce very fine, dry, prepacked sand for gunite filler between rip-rap to prevent washing. "It was a difficult job," reports R. C. Griffin, Production Manager. "The finished product had to meet U. S. Engineers' specification of 95 to 100% passing #16 mesh screen, 60 to 85% passing #30 mesh, 30 to 50% passing #50, and 15 to 25% passing #100. Material could not carry over 1½% moisture content.

"We started the operation with a clamshell and truck. This combination was not satisfactory. The clamshell dug too deep, continually getting sand that was too moist. The trucks needed to have roads built and maintained in order to haul over the sand pile to the screening plant (it cost $800 just to build one short roadway). Production averaged only 35 tons an hour."

Consolidated Rock then rented a high-speed D Tournapull from Sterling R. Macbeth & Co., Inc. of Montebello, California. The rubber-tired 7-yd. "D" proved to be "just the right tool for the job," according to Mr. Griffin.

"It got sand of proper moisture by making a very thin cut," Griffin reports of the self-loading rig. "It doubled our production, delivering 75 tons of sand an hour at an operating cost about 10% lower than the other method. It needed no road-building or sprinkling of the haul route to travel any place over the entire sand area."

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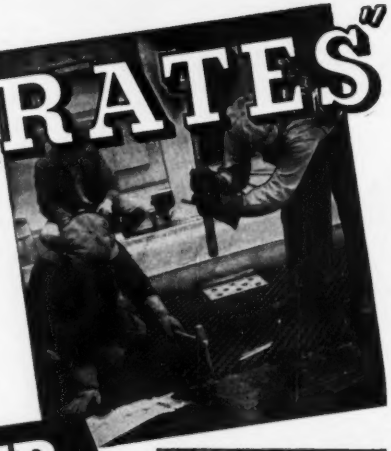

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their jobs than is customary in America.

• **Bidding procedure**—Generally, bids are prepared, not on actual construction costs plus a reasonable profit, but on what is thought can be gotten for the work. No adequate laws exist in Germany to prevent collusion among bidders and although the situation could be remedied by inviting bids from firms in a large surrounding area, German contractors vigorously object. They call it wasteful, contending that a large number of bidders means too much duplication of engineering effort.

Often, following bid-openings, several firms will come in with offers below the apparent low bidder. Firms of established reputation find it difficult to believe that on public work, the firm with the low bid—but perhaps less reputation—will get the contract. Many large, well-established firms are consistently underbid by little-known firms, fully qualified for the work. However, under the European system of full contractor responsibility for design adequacy and structural safety, the reliability of the firm must be carefully considered along with the low bid.

International briefs . . .

• **Canadian construction**—Total new capital expenditures in Canada this year are $2,941,000,000, according to revised estimates of the Dominion Bureau of Statistics. This is $253 million greater than last year. During the current year, the report says, the construction industry is heavily engaged in providing new hydro developments, mines, pipe lines, smelters, railways and other projects which contribute to the defense effort and expand the nation's resources.

• **Adana Plain development**—The Republic of Turkey has obtained a loan of $25,200,000 from the International Bank for Reconstruction and Development to assist in the development of the Adana Plain, a productive agricultural and industrial area in south central Turkey. The loan will help to finance a multi-purpose dam on the Seyhan River for flood control, irrigation and power. The project will be carried out by the Turkish Ministry of Public Works, which will operate and maintain the dam, as well as the irrigation and flood control works. The power generating and transmission facilities will be operated by a private corporation not yet decided.

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VAUGHN STREET AREA where Portland plans an $8-million slum clearance program for industrial expansion. Guilds Lake, where industry is making rapid growth, is at upper left center. The slum clearance project is slated for the area in the lower left.

Portland land deal marks start of $8-million industry-site program

The city which was Uncle Sam's biggest wartime housing manager—Portland, Ore.—has embarked on a series of real estate transactions in an ambitious program of urban redevelopment and slum clearance.

It all started with the transfer—early in September—of 411 acres of land and more than 5,100 dwelling units from the federal government to the Portland Housing Authority, all for only $707,948.

No sooner had the federal government bowed out of most of the public housing picture in the Oregon city than the Portland agency re-sold to the Spokane, Portland & Seattle Railway Co., 71 acres of industrial sites for $783,431.

The housing authority will use its new properties to make a three-pronged attack on Portland's industrial (the city is starved for new factory sites) and residential housing problems.

• Sale of the 71 acres in what is called the Guilds Lake area was the first in a series of sales planned to "contribute substantially" to a planned $8-million Vaughn Street program to clear slum areas for conversion to industrial use.

• An indirect contribution to slum clearance will be made by using some of the newly acquired housing for resettlement of tenants living in areas scheduled for clearance. Federal grants for redevelopment require that provision be made for persons living in areas to be razed.

• Transfer of the housing units to local control will open their use to low-income families generally. Under federal rules the units could be rented only to veterans or servicemen.

• **Guilds Lake**—Mrs. Ralph Rasmussen, chairman of PHA's board of commissioners, explained that the sale of the Guilds Lake area to the railway company was planned to make it available to private enterprise at cost, plus the expense of necessary improvements. SP&S is restricted by law from speculating in industrial sites.

The company has agreed to make the land available only to industries that will fit into Portland's zoning ordinances, avoiding those that would create nuisances such as excessive smoke and noise.

Because 357 housing units are still in the Guilds Lake area, the housing authority has entered into a three-year lease with the railway company for the 56 acres on which the units are located. Title to the structures remains with the authority. This leaves 15 acres which can be utilized immediately by industry. It is the PHA's intention to transfer the tenants to other public housing as soon as it becomes possible to do so.

The mass transfer of housing—estimated to be worth about $4 million—was authorized by the Housing Act of 1950 which permitted transfer of land from the Federal Public Housing Administration to local agencies.

The Portland deal virtually closed a federal-local partnership in housing of more than 10 years' standing, the federal government retaining ownership of 85 units used by airbase personnel.

• **More than N. Y.**—PHA at the peak of its public housing era had 19,189 units, some 5,000 more than New York City, its nearest rival. They represented an investment of $52 million.

The biggest slash in this number occurred on Memorial Day, 1948, when Columbia River floodwaters smashed 9,942 dwelling units in Vanport City, once called the "largest mass housing experiment of all time."

Many other units, originally located on lands leased from the city or private owners, were subsequently torn down and the property returned to the original owners. Other units on such lands now owned by PHA will be razed as lease terminations are requested.

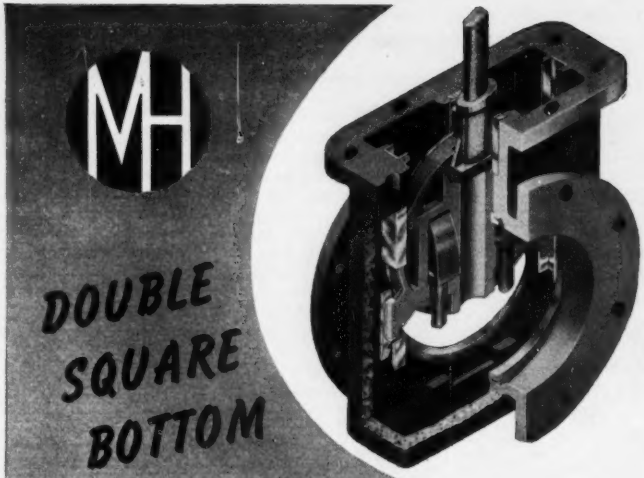
Neither the Vanport City nor the East Vanport sites are included in the present transfer. The 648 acres that was Vanport, now largely reconverted to farming, remain in federal hands. East Vanport had been cleared even before the flood.

Also excluded from this deal is Columbia Villa, a "permanent" project with 400 wood ranch-type structures. These units were purchased by the Portland authority several years ago for $1.4 million and are being paid for over a 40-year period.

The only other permanent-type project built in Portland's public housing is Dekum Court, the 85 units retained for airbase use. PHA at present plans no more permanent units to replace temporary ones.

All of the 5,100 temporary units involved in the mass transfer are of wood frame construction, built to last about 10 years. That time has passed for many of the units, but repairs have kept them in good enough condition so they can house more than the present 2,400 tenants.

• **Next step**—The Vaughn Street project, next major step in Portland's re-



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development, will involve rehabilitation of an area of 60 average city blocks. This will require extensive resettlement, as it is now home site for some 2,000 persons.

Legal authority is clear for the project—the constitutionality of the state's new urban redevelopment law had been challenged and was upheld by a recent circuit court decision.

A charter amendment which will allow the city to participate in an urban redevelopment program will be voted upon in the coming election. Success of the proposal is anticipated, as there is no organized opposition to the slum clearance project. Surveys show an estimated 90% of the people in the area favor a redevelopment program.

The housing authority has committed itself to a "substantial contribution" to the city's one third share of the net cost for the project.

PHA has invested some $33 million in operational costs and repair and maintenance of both temporary and permanent units over the last 10 years, the difference between a $41.9-million income for all its projects and $5.3- million net paid to the federal government and $3.5 million paid to local bodies in lieu of taxes. The entire program is operated under a strict non-profit, budget system.

• **Rent**—Since acquiring the property, the Portland authority has set up new rent schedules to conform to Oregon laws. Maximum net income limits for new admissions will range from $2,300 for a couple without minor dependents to $3,660 for a family including seven minors. Maximum incomes for continuing occupancy by those already in the projects will range from $2,900 to $4,350. Rent schedules Jan. 1 will be on this basis:

Gross rent will be 24% of net annual income of families with no minors; not less than 20% of net income of families with less than three minors and not less than one-sixth for those with three or more children. Minimum gross rent will be $29 a month.

Redevelopment plan okayed

After lengthy hearings and meetings, Cleveland's city council passed and sent to voters the contested $7-million urban redevelopment issue, part of a $54-million capital improvements program approved by council.

A "rule" ordinance was passed by council permitting Cleveland to go ahead with the program on its own rather than under state law.

Louisville expressway changes forced by traffic

A 25-year old idea is coming to life in Louisville, Ky., in the form of a $6.5-million expressway, which, first called the "Inner Belt," is now called the Henry Watterson Expressway, in honor of the famous former editor of the Courier-Journal.

The project, somewhat in the manner of Topsy, "just growed" from a secondary thoroughfare into a partially limited-access highway which will play a vital part in Louisville's expressway program. It will skirt around and go through the city for 12 mi.

Work on the project is gaining momentum rapidly and the completion date is now set for late 1954. Contracts for all phases of the job except final surfacing of certain sections are expected to be let before the end of the year.

• **Linking streets**—The plan started in 1929 with the idea that existing streets could be linked together to shuttle traffic around the busy central section of downtown Louisville.

From that starting point, plans have emerged for the present expressway, which will have three railroad overpasses and seven or eight grade separations.

Over most of its length the expressway will have four lanes. For the remainder, only two lanes are called for now, with a possibility that these, too, will become four lanes.

If the four-lane work is accepted, the final cost of the project will be about $7.6 million.

The actual construction costs of the job are being shared by the state and federal governments. The rights-of-way were purchased jointly by the state, federal and local governments.

• **Traffic**—The rapid development of traffic through the area to be served by the expressway has been a headache for the planners.

Traffic estimates for 1970, made by Deleuw, Cather & Co., of Chicago, in 1950, and upon which the planning for the Watterson Expressway was based at that time, already are out of date.

Much of the traffic increase in these areas arises from industrial activity in the southeastern section of the city.

On top of this, and not included in any surveys, is the traffic load expected to originate because of the big General Electric Co. plant now being built in that area. A survey and estimate of traffic, shown in a report by some city officials, recently foresaw 14,000 cars a day added to traffic in the GE plant area.

Because of these unforseen developments in the traffic load, various changes in plans have been forced already and others are being considered. There is some talk of extending the expressway all the way to the Ohio River well north of the city.

But any major extensions must wait on more money.

"The money allocated for this work from federal funds already is committed," said Mack Galbreath, of the U. S. Bureau of Roads.

Nevertheless, a major part of the job of giving Louisville an adequate street and highway system will have been done with the completion of the Watterson job. And then work can start on another expressway, running north and south, a project that is well into the planning stage.

Missouri flood damage set at $179 million

Last April's Missouri River floods caused damages that are now officially estimated at $179 million. In announcing the totals Brig. Gen. W. E. Potter, division engineer of the Corps of Engineers at Omaha, said that the tabulations showed that agriculture suffered the heaviest losses because the flood waters were largely kept out of the cities by completed protection works.

These works are estimated to have averted $130-million damages at Kansas City, and $62.5 million at Omaha-Council Bluffs. A further reduction in damages in the amount of $35.9 million is attributed to the storage of flood waters in the Fort Peck, Heart Butte and Shadehill Reservoirs. In addition, Corps of Engineers levees cut agricultural losses by $6 million and other local levees saved a further $4.1 million.

The flood loss is distributed as follows: agriculture, $72.8 million; cities, $33.4 million; disruption of transport, communications and utilities, $29.2 million; damage to levees, cost of flood fighting, etc., $43.6 million.

The breakdown by states shows the following: Missouri, $53.8 million; Iowa, $43.4 million; Nebraska, $30.6 million; Dakota, $24.8 million; Kansas, $17.4 million; Montana, $6.6 million; and North Dakota, $2.4 million.

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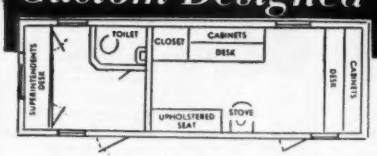

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MUNICIPAL

Water development proposed for Rhode Island

A program of long-term planning for the development and use of Rhode Island water resources was recently recommended in a report submitted to Governor Roberts by the Rhode Island Water Resources Commission and its engineering consultants, Charles A. Maguire & Associates, Providence.

The commission, created in 1951, did not attempt to write a blueprint for the state or local governments. It called upon the state's 39 cities and towns to look to their own supplies, working from the information compiled by the engineers.

The commission's basic recommendations were:

- Continuation of the study of underground water resources, expanding the investigation to include tests for quantity and quality of water from these sources.
- Water supply departments should keep records of probable safe yields of the sources of supply, the population served and daily consumption.
- Establishment of new water districts or authorities for pooling of supplies and distribution where engineering studies establish the economy of such a move.
- Extension of water services into suburban areas "where economically feasible," when fire insurance ratings may be "radically improved" and where the State Health Department finds extended service a necessity.
- Obtain new sources of supply for Woonsocket, Island Park in Portsmouth and North Scituate, where the engineers found existing sources to be "critically inadequate" and producing water of "poor" quality.
- Providence should sell some of its surplus water as a source of additional income.

Subway plan delayed by $174-million cost rise

The New York City Board of Estimate postponed for 90 days, last week, action on a proposal by the Board of Transportation to start construction of the Second Avenue Subway. The action was taken after it was found that cost estimates had risen $174 million above previous estimates by the board.

Changes in construction and new car improvements were blamed for the miscalculation.

The transportation board had hoped to let the first contracts for the Second Avenue line this fall.

Sea water desalting research work undertaken by Bureau of Reclamation

A sea water desalting research program is being launched by the Interior Department's Bureau of Reclamation under a new law passed last July. At the same time Congress appropriated $125,000 as a starter to finance "co-ordination work" until the program can be reviewed next year and lines of research laid out.

The program is important because the federal government will now concentrate its resources and facilities to bear on solution of the problem of water shortage.

The program calls for scientific and practical research to develop means to bring down costs of making fresh water from salt water to within reach of irrigated farms, industries and cities in water-short areas of the United States. Research into purifying brackish and alkaline waters in inland areas is also to be started. The program eventually will call for expenditures of several million dollars. It is to be carried on through cooperation with universities, private industries and other organizations, and other government agencies.

• **Federal government action**—Legislation to provide for research by the federal government into the feasibility of "reclaiming" salt water was sponsored by several congressmen for a number of years. The bill which finally made it (H.R. 6578) originally called for a $25-million study and demonstration of sea water distillation and rainmaking.

The artificial precipitation item was pulled out of the bill and authorizations reduced to $2 million.

• **Interior's first moves**—Interior's program most likely will stress improvements in compression distillation.

Secretary of Interior Oscar L. Chapman has designated Goodrich W. Lineweaver, Assistant Commissioner of Reclamation, to head the federal program.

One of the initial steps Lineweaver will take is the formation of an advisory group of top-ranking leaders of educational, scientific and other agencies, public and private.

Another will be to establish the relationship between government agencies and private organizations. Activities are to be co-ordinated with or conducted jointly with the Department of Defense in accordance with the law.

• **Preliminary work done**—A number of federal agencies and private research organizations have done considerable work in purification. The technical branches of the Army and Navy handled the bulk of the nation's sponsored research. Work was done also by the Naval Medical Research Center at Bethesda, Md., the Smithsonian Institution, and the U. S. Coast Guard. The medical group developed a simple chemical treatment for small quantities of sea water using silver oxide and sodium urate to remove dissolved salts. Smithsonian technicians made a study of distillation using solar energy as the source of heat.

The Coast Guard and other military departments studied compression distillation. Both the Army and Navy have active projects under way on compression distillation. The Navy has used compression stills on board ships for many years. The Army Engineers have been experimenting with larger stills to be shipped with troops to places having no fresh water. One such large unit is now under test in Bermuda and is furnishing a U. S. base there with all its fresh water.

The theory of compression distillation itself has been recognized for at least a century but it was promoted largely through research activities of various defense agencies during World War II.

• **No pilot plants**—The law forbids demonstration plant construction, and provides that not over ¼ of the appropriation may be spent for administration.

It provides that the $2 million is to be spent equally throughout a five-year period at $400,000 a year. The Appropriation Committee refused to give the $400,000 first year money, but later gave Interior $125,000 for this fiscal year (1953) so that a start could be made. Interior may give out one or two small research contracts.

A diversified research program embracing several ways of using sea water is being asked for by John C. Green, director of Commerce Department's Office of Technical Services. OTS officials feel that research should include these three investigations:

(1) Purification, aimed at getting potable water;

(2) Extraction, to get elements contained in the sea water; and,

(3) Utilization of the water for "ocean farming."

• **Problem is cost**—It is the present belief of one of the major producers of such equipment, that sea water can be purified by this process at a cost competitive with and even under that of conventional filtration practices used by larger cities in obtaining drinking water from natural fresh water (ENR May 18, 1950, p. 32). They estimate that present costs would be some 10 to 12 cents per thousand gallons of pure water. By comparison, the cost of filtration of water in Washington, D. C., is 16 cents per thousand gallons.

(There are those who see more promise in solar distillation as the way in which to beat the cost of desalting sea water.)

The trend on compression distillation units has been toward higher efficiencies. These generally are synonymous with bigger units and therefore higher initial costs and maintenance. But it is possible to build small electrically-driven compression units costing some $2,500 and capable of delivering roughly 700 gpd.

Compression distillation has been recognized elsewhere throughout the world. For instance, the world's largest sea water evaporation plant has been built at Fahaheel, Kuwait (on the Persian Gulf) by the Kuwait Oil Co. It provides 720,000 gpd of drinking water and consists of six triple effect evaporators (ENR Aug. 11, 1949).

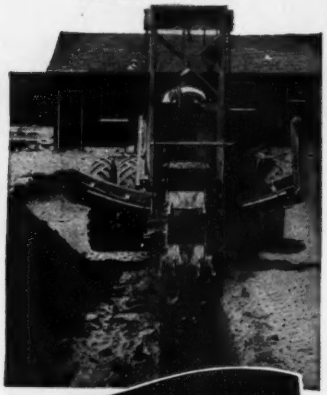
Pan-American Ry. Congress to meet in Washington

The eighth meeting of the Pan-American Railway Congress is to be held in Washington, D. C., June 21-25, 1953. The last congress was held in Mexico City in October, 1950.

Part of the program for the coming meeting is expected to be devoted to the construction and maintenance of railways, including such subjects as modernization of track for higher speeds and mechanization of track maintenance work.

An exhibition of railway equipment is to be held in Atlantic City concurrently with the congress in Washington.

Dig Cleaner Trenches ..FASTER



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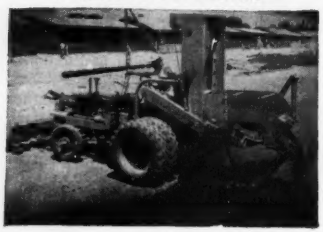
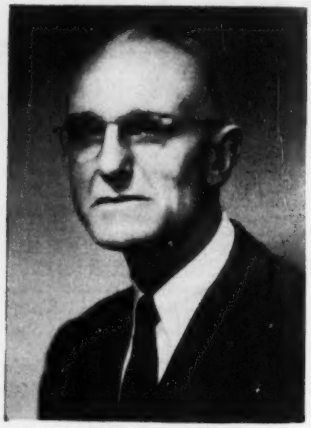


MEN AND JOBS



JONATHAN JONES, retiring chief structural engineer for Bethlehem Steel Co.

Structural steel engineer ends 50-year career

Retirement of Jonathan Jones as chief engineer, fabricated steel construction, and the appointment of Ethan F. Ball to succeed him have been announced by Bethlehem Steel Company.

Ball has been assistant chief engineer, bridges and buildings, in the fabricated steel construction division.

Taking Ball's place as assistant chief is W. H. Jameson, since 1938 assistant engineer, bridges and buildings.

Jones' retirement concludes a career of nearly half a century in steel construction, during which he gained recognition as one of the country's foremost structural engineers.

He is a graduate in civil engineering from the University of Pennsylvania, class of 1906.

Jones was early associated with McClintic-Marshall Company. He joined Bethlehem when the steel company acquired the construction firm in 1931.

He is well-known in many parts of the world. He was at one time resident engineer in charge of erection of steel mill buildings for Tata Iron and Steel Co. and Tinplate Company of India, at Jamshedpur.

He has supervised the engineering on such structures as the Golden Gate Bridge, the George Washington Bridge, and most recently, the newly completed Chesapeake Bay Bridge.

He served during World War I as a major. For seven years he was engineer of bridges in the Department of Public Works in Philadelphia, Pa.

Jones is a member of the American Society of Civil Engineers, American Society for Testing Materials, American Institute of Steel Construction, American Railway Engineering Association, Society of American Military Engineers, American Welding Society, American Iron and Steel Institute, and the Engineers Club of Philadelphia.

He recently received two honors. In 1951 he was made an honorary member of the ASCE and last spring Lehigh University conferred upon him the honorary degree of Doctor of Engineering.

Sanitary engineer goes on mission to India

C. H. Atkins, chief of the Division of Sanitation, Public Health Service of the Federal Security Agency, has been assigned as chief sanitary engineer of the public health mission to India under the Point 4 program.

Assistant Chief Leonard M. Board was named to succeed Atkins as chief of the division.

After a month of indoctrination at the State Department's Foreign Service School, Atkins will leave about Oct. 1, for New Delhi, where he will serve also as assistant chief of mission, chief sanitary engineer of the government of India, and visiting professor of sanitary engineering at the All-India Hygiene Institute. He will be accompanied by Mrs. Atkins and their two daughters.

Born in White Plains, N. C., Atkins holds a B.S. degree in civil engineering from the University of North Carolina, with post graduate work both there and at Harvard University. He was with the North Carolina State Board of Health when he was commissioned in the Public Health Service in 1937.

He is a member of the American Public Health Assn., the Federal Sewage Research Assn., and the Inter-American Association of Sanitary Engineering. He has served since 1949 as secretary-treasurer of the Conference of State Sanitary Engineers.

Board is a native of West Virginia. He holds the degree of Bachelor of Science in civil engineering from West Virginia University, and the Master of Public Health degree from the University of Michigan. He has been engaged in public-health work on county, state and federal levels since 1929.

Careers . . .

•**Appointed—Charles L. Bell,** Los Angeles assistant city engineer, will be in charge of engineering and subcontracts for Peter Kiewit Sons' Co., on the construction of the A-plant in Pike County, Ohio . . . Newly appointed professor of civil engineering at the University of California, Berkeley, is **Paul F. Keim,** formerly with Knappen-Tippetts-Abbett - McCarthy, Engineers, New York and San Francisco . . . The post of traffic and planning engineer in the Virginia Department of Highways has been given to **John P. Mills, Jr** . . . The University of Dayton, Ohio, appointed **Edward J. Baldinger** who is now assistant professor of civil engineering, as acting head of the Department of Civil Engineering.

Neal Dow McDowell, president of the Maine section ASCE, has been promoted to the position of district engineer, U. S. Bureau of Public Roads for Maine . . . **Deitz A. Rudisill,** consulting engineer at Lenoir, N. C., has joined the engineering and architectural firm of Clemmer and Horton of Hickory, N. C.

•**Elected—Stanley M. Dore,** deputy chief engineer of New York City Board of Water Supply, has been elected president of the New England Water Works Association . . . L. A. Elsener, manager of the Chicago Bridge & Iron Co.'s, San Francisco office was elected a vice-president of the company.

•**Honored—John N. Newell,** chief engineer of Massman Construction Co,. Kansas City, Mo., has been awarded the Construction Engineering Prize by the ASCE. The prize was awarded for his design of floating caissons for the York River Bridge at Yorktown, Va. (ENR July, 1951, p.).

•**Retired—H. Ross MacKenzie,** has retired after a career of 40 years with the Saskatchewan Provincial Highway Department . . . **W. McK. (Mac) Green** has resigned as chief designer of structural steel for the J. E. Sirrine Co., and has opened a Greenville, S. C., office for the practice of structural engineering . . . The president of the engineering and archectural firm of Harold N. Hermann & Associates, of Cincinnati, Ohio, **Harold N. Herman** has retired . . . **C. Henry Trask,** design and construction engineer for E. I. du Pon de Nemours and Co., retired last month.

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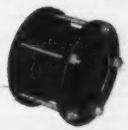

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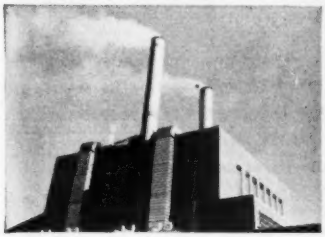

PRECIPITATORS, BREECHINGS, STACKS AND HOPPERS ALL LINED WITH "GUNITE" BY CEMENT GUN CO.

Photos above show units number 1 and 2 of the new 150 m.w. steam electric station of the Pennsylvania Power and Light Company at Sunbury, Pa.

The precipitators, breechings and stacks, visible on the exterior of the building, were all lined with re-inforced "Gunite" by Cement Gun Company as were the forty coal hoppers inside the building.

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OBITUARIES

James T. Hope, 68, a structural engineer employed by the American Bridge Co., died Sept. 6 at Philadelphia. He had been with the company for 50 years. Among the projects he worked on were the Delaware River Bridge, the Washington Post Office and the Atlantic City Convention Hall.

Ernest G. Martin, 65, associate civil engineer and the chief draftsman of the Watertown, N. Y., office of the New York State Department of Public Works, died Aug. 31. He had been with the department for 38 years.

Walter E. Rowe, 77, former dean of the school of engineering at the University of South Carolina, died at Williston, S. C., Sept. 5. His firm, Rowe & Chapman, were city engineers for Williston.

Orval C. Herbert, 51, civil engineer for Sedgwick County, Kansas, died at Wichita Sept. 1. During World War II he served with Army Engineers doing construction work in Iran.

Francis A. Kairn, 70, a civil engineer, died in Chicago on Sept. 1. Most recently he was with the McKee Construction Co. on a project at Inland Steel Co. He had been an engineer for the construction of two bridges and an underpass in Chicago as well as for the construction of buildings at the Great Lakes Naval Training Station.

Arnold S. Proudfoot, 73, retired assistant treasurer of the Turner Construction Co., New York, who had been with the company for 37 years, died in Boston, Mass., Sept. 8. He was a C.E. graduate of Harvard Engineering School, 1903.

Samuel E. Langfitt, Jr., 41, a civil engineer with the Burkhard-Chapla Construction Co., Vermilion, Ohio, and formerly in a similar post with the Eichleay Corp., Pittsburgh, for ten years, died Aug. 9.

Thomas A. Power, 65, civil engineer, died Aug. 29 in Syracuse, N. Y. He was graduated from Syracuse University as a civil engineer in 1910. Early in his career he served as a public works engineer.

Howard E. Waddington, 72, former steel mill construction engineer, died in Bridgeville, Pa., Sept. 8. He retired from the Universal-Cyclops Steel Corp. at Bridgeville in 1948.

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

ELSIE EAVES, Manager — *J. A. MAHONEY, Reports* — *M. R. ROESSLER, Statistics*

NEW ENGLAND

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **T. W. Cunningham, Inc.,** 38 Columbia St., Bangor, Me. CA $1,057,700. air base facilities, Limestone Air Force Base, Eng. 19-016-52-80, LIMESTONE, ME. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids July 17, awarded Sept. 10. CD 7/23 under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **Eagle Constr. Co.,** Park Place, Newark, N. J. LB $2,008,830. est. $1,000,000 to $3,000,000. HOUSING Proj., Fort Devens, Eng. 19-016-53-19, AYER, MASS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Sept. 12. CD 9/10.

▲ **John Bowen Co., Inc.,** 173 Boston St., Boston, Mass. LB $11,380,000. est. $11,500,000. PH 8 chronic desease HOSPITAL and nurses home, Morton St., Forest Hills, BOSTON, MASS. State, Dpt. P. Health, State House, Boston, Mass. Bids Sept. 12. CD 8/19.

▲ **J. Slotnik Co.,** 99 Chauncey St., Boston, Mass. CA $1,633,000. est. $850,000. Junior High SCHOOL, Burncoat St. near Rexhame Rd., WORCESTER, MASS. City, School Dept., 32 Franklin St., Worcester, Mass. CD 9/9 under LB.

MIDDLE ATLANTIC

BIDS ASKED—BUILDINGS

▲ **Pa., Phila.**—GARAGE—B.A. 9/30—Phila. Parking Auth., Packard Bldg., garage, Walnut and 18 Sts. $1,250,000. Simon & Boulware, 123 S. Broad St., archts. CD 10/19/51.

▲† **Md., Fort George C. Meade**—HOUSING—B.A. 10/8—U. S. Eng., 24 St. and Maryland Ave., Baltimore, troop housing, facilities, incl. eleven 3 story, 39x266 ft. barracks, three 40x120 ft. repair shops, three 200x503 ft. warehouse, 66x123 ft. paint shop, heating plant, mess hall, utilities, $5,500,000. Plans deposit $105, F. L. Moehle and Fenton & Lichtig, 2514 W. Charles St.; Lawrence A. Menefee, 347 N. Charles St., both Baltimore, archts., Rummel, Klepper & Kahl, 1021 N. Calvert St., and Turpin, Wachter & Assoc., 1004 N. Charles St., both Baltimore, engrs. CD 4/22 under LB.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ PENNSYLVANIA State Hy. and Bridge Auth., 506 N. Office Bldg., Harrisburg.

C. W. Good, Inc., 726 Columbia Ave., Lancaster, Pa., CA. $1,414,000, 20,205 ft. divided highway rein.-con. pavement 24 ft. wide each side of divisor, 2 rein.-con. and one I-beam bridges, Allentown By-pass, Rte. U.S. 22, Northamptoin Co. Bids Aug. 29, Awarded Sept. 10. CD 9/3, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Sano-Rubin Constr. Co.,** 616 Delaware Ave., Albany, N. Y. LB. $1,717,840, Colonie Central HIGH SCHOOL, Albany and Fuller Rds., COLONIE, N. Y. Bd. Educ., Colonie Central Schools, 1203 Central Ave., Colonie, N. Y. Ryder & Link, 122 Jay St., Schenectady, N. Y., archts.

▲ **John McShain, Inc.,** 3 W. Franklin St., Baltimore, Md. CA $1,088,400. est. $1,000,000. 2 story, brick, 150x150 ft., Shriver LECTURE HALL, offices, auditorium, BALTIMORE, MD. Johns Hopkins University, 34 and Charles Sts., Baltimore, Md. CD 8/26 under LB.

SOUTH

BIDS ASKED—BUILDINGS

▲ **Tenn., Knoxville**—RESEARCH CENTER—B.A. 10/7—University of Tennessee, Knoxville, research center and hospital. $1,300,000. Extended date. Baumann & Baumann, 813½ Market St., archts. CD 8/26.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **E. N. Edwards, R. W. Bryan and C. C. McNairy,** Goldsboro, N. C. Owner Builds. $1,100,000. RESIDENCES, JACKSONVILLE, N. C.

▲ **The Massell Companies,** 40 Pryor St., S. W., Atlanta, Ga. Owner Builds. $2,100,000. OFFICE, ATLANTA, GA. CD 8/29.

MIDDLE WEST

BIDS ASKED—BUILDINGS

▲ **Ill., New Lenox**—HIGH SCHOOL—B.A. About 12/1—School Dist. 210, A. Hunter Chapman, Supt. of Schools, New Lenox, brick, concrete high school, $1,250,000. Childs & Smith, 20 N. Wacker Dr., Chicago, Zone 6, archts. CD 7/7.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **J. M. Corbett Co.,** 2501 S. Salt St., Chicago 8, Ill. LB $1,001,832. paving and relocation Lake Shore Outer Dr. from 39 to 49 St., CHICAGO, ILL. Chicago Park Dist., 425 E. 14 St., Chicago 5, Ill. Bids Sept. 4. CD 8/29.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **A. J. Babarsky Constr. Co.,** 95 E. Main St., Chicago Heights, Ill., CA. $3,500,000. 300 HOUSES along Shoe Factroy Rd. near ELGIN, ILL. Blackhawk Builders, 5 Burlington Way, Clarendon Hills, Ill. Awarded Aug. 26.

▲ **Midwest Community Builders, Inc.,** 44 North Ave., North Lake City, Ill. Owner Builds. $2,700,000. 200 HOUSING units. NORTH LAKE CITY, ILL. David Fredman, 4308 N. Mason St., Chicago, Ill., archt. Awarded Aug. 25.

▲ **Fowler-Vernath Constr. Co.,** 303 S. 1st Ave., Duluth, Minn. CA. $1,380,400. HOUSING project, Wis. 1-2, 136 units;

Kileen & Wille Constr. Co., 1402 Poplar Ave., Superior, Wis. CA $563,734, Wis. 1-3, 64 units, SUPERIOR, WIS. Superior Housing Auth., Superior, Wis. Bids Aug. 27. CD 9/12 under LB.

▲ **Birl Dearing,** 1950 Catalpa St., Berkley, Mich. CA Est. $1,200,000. single HOMES DEVELOPMENT Pine Lake and Sylvan Manor, Middlebelt, Square Lake and West Long Lake Rds., BIRMINGHAM, MICH. Pine Lake Manor, 2900 Middlebelt St., Birmingham, Mich. McAlpine Map Co., 636 S. Woodward St., Birmingham, Mich., engrs., Irving Rubin, 24779 Renseller St., Oak Park, Mich., archt.

Kuschell Realty, 5227 E. Seven Mile Rd., Detroit, Mich. Owner Builds. Est. $950,000. seventy brick HOMES, Little Mack and Erben Rds., DETROIT, MICH.

WEST OF MISSISSIPPI

SOON LETS CONTRACT—BUILDINGS

▲ **Tex., Houston**—STORAGE WAREHOUSE—Houston Chronicle c/o Chronicle Bldg., soon lets contract, 121x563 ft. steel frame, poured concrete interior firewalls, rein.-con and fireproof type newsprint storage or warehouse, all outside utilities, etc. Approx. $1,000,000. J. Russ Baty, 330 Bankers Mortgage Bldg., archt., Robert J. Cummins, 1028 Bankers Mortgage Bldg., engr. CD 6/12.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **SOUTH DAKOTA**—State Hy. Comn., Pierre,

Guy H. James Constr. Co., 1st. Natl. Bldg., Oklahoma City, Okla., **Foster-Smetana Co.,** 4360 Nicholas St., Omaha, Neb., LB. $1,285,832, 2,004 ft. superstructure over Missouri River, Proj. WAR 165-1, Brule Co. Bids Sept. 9. CD 8/14.

▲† **Dobson Bros. Constr. Co., Abel Constr. Co.,** and **Robinson Constr. Co.,** 512 1st Natl. Bank Bldg., Lincoln, Neb., CA. $5,198,100, parking aprons at Lincoln Air Force Base, Inv. 25-66-53-4. LINCOLN, NEB. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Sept. 3. CD 9/11 under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Manhattan Const. Co.,** Manhattan Bldg., Muskogee, Okla., CA. Approx. $3,500,000. 6 story OFFICE, 10th and Boston Sts., TULSA, OKLA. Sinclair Oil Co., Sinclair Bldg., Tulsa, Okla., David G. Murray, Sinclair Bldg., Tulsa, archt. Awarded Sept. 10.

▲ **O'Rourke Constr. Co.,** 1001 W. Commerce St., Dallas, Tex. CA. Approx. $3,250,000. continued expans. of DEPARTMENT STORE, DALLAS, TEX. Titche-Goettinger Co., Elm and St. Paul Sts., Dallas, Tex. Thomas-Jameson & Merrill, 820 N. Harwood St., Dallas, Tex., archts.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

▲ **Calif., Los Angeles**—B.A. 10/8—Metropolitan Water Dist. of Southern Calif., 306 W. 3 St., Los Angeles, Garvey Reservoir 1,500 A. F. middle feeder sys., Monterey Park, $3,000,000. Plans deposit $5, R. B. Diemer, engr. CD 12/21/51.

▲ **Ariz., Phoenix**—B.A. 10/28—City, City Hall, filter plant, presedimentation basin and raw water pump station, electrical substation, modifications to present filter plant, $3,000,000, Headman, Ferguson & Carollo, 3308 N. Third St., Phoenix, engrs. CD 11/29/48.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Sound Constr. & Engr. Co.,** 1300 Aloha St., Seattle, Wash. CA. $3,929,590, plant addn. of Boeing Airplane Co. SEATTLE, WASH. U. S. Air Force, Pentagon Bldg., Wash., D. C. Bids Aug. 13. CD 8/27, under LB.

▲† **R. V. Lloyd & Co.,** Coachella, Calif. CA $2,584,800. est. $2,586,886. Schedule 1, Station 138 plus 86 to 620 plus 00.

Engineering Constructors, Inc., Los Angeles, Calif. CA $2,065,022. est. $1,791,101. Schedule 2, Station 620 plus 00 to 1146 plus 60.

Johnson Western Constructors, 2100 Wilmington St. and San Pedro Rd., San Pedro, Calif. CA $3,192,826. est. $2,956,511. Schedule 3 Station 1146 plus 60 to 1901 plus 60, constr. earthwork, pipe lines, structures for San Jacinto-San Vicente Aqueduct, San Diego Proj. Spec. DC 3754, CALIFORNIA Bureau Reclamation, c/o Dist. P. Wks. Officer, Eleventh Naval Dist., 1220 Pacific Hy., San Diego, Calif. Grand total, $7,843,000. Bids Aug. 19, awarded Sept. 8. CD 8/22, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Jacobsen Constr. Co.,** 724 S. 3rd East St., Salt Lake City, Utah, CA. Approx. $1,250,000. Mines RESEARCH LABORATORY on the University of Utah Campus, SALT LAKE CITY, UTAH. Kennecott Copper Co., Kearns Bldg., Salt Lake City, Utah. Bids Aug. 26. CD 3/11.

▲† **Tolboe & Marlin Constr. Co.,** 3091 Main St., Salt Lake City, Utah, LB. $1,495,000, 100 igloo type AMMUNITION MAGAZINES and bit. surf. Blocks 612 and 614, Tooele Ordnance Depot. Serial No. ENG 04-203-52-1008. TOOELE, UTAH. U. S. Eng., 180 New Montgomery St., San Francisco 19, Calif. Bids Aug. 28. CD 8/7.

▲ **Ralph & Horwitz,** 1835 N. Flint St., Portland, Ore., CA $2,372,634. 8 story OFFICE for occupancy by Bonneville Power Admin., PORTLAND, ORE. Lloyd Corp., 720 N.E. 12 St., Portland, Ore. Awarded Sept. 9. CD 7/29, under LB.

† **Larsen & Co.,** 345 W. 4th South St., Salt Lake City, Utah, LB $583,051, prefabricated BUILDINGS, water storage, sanitary sewage sys. Eng 45-164-53-5. CAMP HANFORD, WASH. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids Sept. 10. CD 8/12, under Waterworks.

Proposed Projects—

WATER SUPPLY

▲ **Okla., Lawton**—City, 20 mi. 30 in. c.i. water main from Lake Lawtonka, $2,000,000. W. B. Hendrick, 216 Koehler Bldg., Lawton, consult. engr. CD 8/23/51.

▲ **Wyo., Casper**—City, City Hall, water sys. expansion. $1,500,000. Black & Veatch, 4706 Broadway, Kansas City, Mo., consult. engrs. CD 9/2.

SEWERS, WASTE DISPOSAL

▲ **O., Cleveland**—City, City Hall, bond election No. 4, sewage disposal expansion, $6,000,000; altering incinerators, $500,000; sewer construction and expansion, $7,000,000. CD 11/14/50.

▲ **O., Euclid**—City, City Hall, 585 E. 222 St., bond election November 4, storm sewers on Lloyd Rd. and E. 222 St. $1,000,000.

BRIDGES

▲ **Fla., Daytona Beach**—Volusia Co. Bd. Comrs., Daytona Beach, South Bridge at foot of Orange Ave. $8,000,000. Reynolds, Smith & Hills, 227 Park St., Jacksonville, consult. engrs.

▲ **O., Cleveland**—City, City Hall, bond election Nov. 4, imprv. bridges. $1,000,000. CD 12/10/43.

STREETS AND ROADS

▲ **O., Cleveland**—City, City Hall, bond election Nov. 4, street paving, $3,000,000; street openings and widenings, $3,500,000; expansion, construction freeway, $6,000,000. CD 9/18/44.

▲ **Tex., Brownsville**—Cameron Co., Brownsville, county road constr. $4,500,000. CD 8/3/45.

EARTHWORK, WATERWAYS

▲ **O., Cleveland**—City, City Hall, Zone 14, bond election Nov. 4, lake-front and shore protection. $2,500,000. CD 5/28/52.

AIRPORTS

▲ **Neb., Omaha**—AIRPORT IMPRVS.—City, City Hall, 18 and Farnam Sts., $1,685,000 bond election November 4, airport imprvs., incl. new terminal bldg., aprons, utilities, etc. $3,370,000. E. W. Woodbridge, city engr. CD 8/29.

▲† **N. Y., Newburgh**—AIRFIELD PAVING, etc.—U. S. Eng., 80 Lafayette St., New York Zone 13, plans by Frederic R. Harris, Inc., 27 William St., New York, Zone 5, airfield paving, fuel storage and dispensing facilities, maintenance and draining facilities, Stewart Air Force Base. $3,000,000-$5,000,000.

▲ **O., Cleveland**—AIRPORTS—City, City Hall, Zone 14, bond election Nov. 4, imprvs., expansion of airports, $6,000,000. CD 11/14/50.

▲ **Tex., San Antonio**—RUNWAY, etc.—City, W. Gunstream Director Airport, extension of NS runway, $2,693,000; extension of EW runway, $2,350,000; 25,000 sq. yds. industrial area ramp, $158,000;

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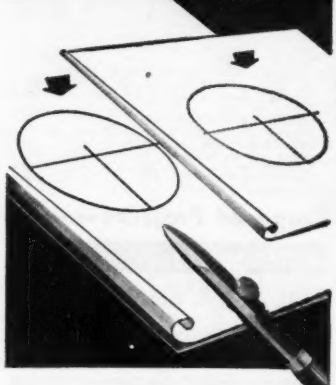

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▲† **Va., Langley Field**—WIND TUNNEL—National Advisory Committee for Aeronautics, Langley Field, remodeling 19-ft. wind tunnel and const. of heat laboratory bldg. $17,000,000. John C. Messick, c/o owner, ch. engr.

LATIN AMERICA

▲ **Mexico, Cuernavaca**—State Govt., Gen. Rodolfo Loppez de Nava, gov., Palacio del Estado, Cuernavaca, Mor., plans state bldg. $1,500,000.

PUBLIC BUILDINGS

† **Calif., Alameda**—MEDICAL DEPOT—U. S. Eng., 180 New Montgomery St., San Francisco, railroad yards, shop and office bldg., Alameda Medical Depot, $721,000.

▲ **Calif., Alhambra**—HIGH SCHOOL—Alhambra City High School Dist., 601 N. Garfield St., plans by Marsh, Smith & Powell, 208 W. 8 St., Los Angeles, 1 and 2 story rein.-con. high school on the Crown City Ranch, San Gabriel. $2,750,000. CD 6/13.

Calif., Bakersfield—CITY HALL—City, City Hall, $950,000 bond election Nov. 4, city hall, Robt. N. Eddy, Kern County Land Co. Bldg., archt.

Calif., Redwood City—HOSPITAL—Sequoia Hospital Dist., Redwood City, voted $985,000 bonds Sept. 4, hospital wings, Stone & Mulloy and S. P. Marraccini, 619 California St., San Francisco, archts. CD 8/1.

▲ **Calif., San Diego**—HALL OF JUSTICE—San Diego Co., Civic Center, $10,000,000 bond election Nov. 4, Hall of Justice, $10,503,384. CD 10/31/45.

▲ **Fla., Jacksonville**—ELECTRIC PLANT—City, city clerk, City Hall, bond election October 7, electric plant addn. $18,000,000.

▲ **Ia., Cedar Rapids**—SCHOOLS—Bd. Educ., $7,500,000 bond election Sept. 29, 2 high schools, 5 schools addns., new elementary school. CD 8/22.

▲† **Ky., Louisville**—WAREHOUSES, etc.—U. S. Eng., 830 W. Broadway, warehouses, shops, utilities, Louisville Medical Depot. $5,155,000. CD 6/28/51.

▲ **Mich., Flint**—COLLEGE—Flint Junior College, W. Fred Totten, pres., Flint, plans by S. Alexander Nurmi, 712 W. Court St., 2 story, bsmnt., brick, steel, concrete Junior College Science and Applied Arts bldg., $1,000,000. CD 2/13/51.

▲† **Neb., Sidney**—MAINTENANCE FACILITIES—U. S. Eng., 1709 Jackson St. Omaha, Neb., maintenance facilities at Sioux Ordnance Depot, $1,085,000. CD 9/14/51.

▲ **N. Y., Brooklyn**—HIGH SCHOOL—Co-ordinator of School Constr., 49 Flatbush Ave. Ext. Zone 1, plans by Lloyd Morgan & Eugene V. Meroni, 110 E. 40 St., New York, Zone 17, 3 story Junior High School, 115 Stuyvesant Ave., Junior High School No. 57. $3,200,000. CD 8/13/45.

▲ **O., Cleveland**—HEALTH CENTER—City, City Hall, Zone 14, bond election Nov. 4, hospital and health center expansion, $3,000,000. CD 11/14/50.

▲ **O., Cleveland**—INSTITUTIONS—City, City Hall, Zone 14, bond election Nov. 4, imprvs. expansion at welfare institutions. $1,000,000. CD 12/10/43.

▲ **Pa., Erdenheim** (Phila. P. O.)—HIGH SCHOOL—Springfield Twp. School Dist., Erdenheim, plans by Howell Lewis Shay, Packard Bldg., Phila., Senior High School. $1,000,000. CD 12/11/46.

▲† **R. I., Davisville**—BATTALION CAMP—P. Wkt. Office, 495 Summer St., Boston, Mass., plans by Cull & Robinson, 385 Benefit St., Providence, troop housing, brig, medical bldg. training bldgs., storage, heating plant, utilities, site preparations, Construction Battalion Camp, $2,500,000.

▲ **Tex., Houston**—WAREHOUSES—Port of Houston, c/o Wharf 13, Warehouse 1, $1,250,000; Warehouse 2, $750,000; Warehouse 3, $1,500,000; on 226 acre site, north of Turning Basin. CD 11/30/50.

▲ **Tex., Laredo**—HOUSING—Laredo Housing Auth., Laredo, 400-unit low-cost housing units. $3,000,000.

▲ **Va., Alexandria**—HOUSING—Alexandria Redevelopment & Housing Auth., 131 Belvoir St., plans by Joseph H. Saunders, 121 S. Columbus St., 198 housing units, Proj. VA-4-4, $1,200,000. CD 7/25, under LB.

▲ **Va., Alexandria**—SCHOOLS—Bd. Educ., 208 N. Columbus St., plans by Robert A. Willgoose, 300 Montgomery St., Senior High School, $1,025,000; plans by Joseph H. Saunders, 121 S. Columbus St., Brookings Elementary School, $700,000. CD 1/18/51.

▲ **Wis., Wausau**—COURT HOUSE—Marathon Co., plans by Childs & Smith, 20 N. Wacker Dr., Chicago, Ill., 3 story part bsmnt., 93x265 ft. court house. $1,700,000. CD 12/30/49.

COMMERCIAL BUILDINGS

▲ **Calif., LaMesa**—HOMES—San Diego Federal Savings & Loan Assoc., 6 Ave. and A St., San Diego, plans by L. C. Major & Assoc., 511 S. LaCienega St., Los Angeles, 1,700 frame, stucco homes, LaMesa Manor, $15,300,000.

▲ **Calif., San Carlos**—HOMES—Economy Builders, Inc., T. M. Peters, pres., 500 S. El Camino Real, San Mateo, 1,000 homes on 500 acre site, $8,000,000.

▲ **Calif., Sunnyvale**—SHOPPING CENTER—Kar Constr. Co., P. O. Box, 187, shopping center, subdivision of 500 homes, apartments, stores, etc. 29.1 site, $8,000,000. CD 4/6/51.

▲ **Calif., Ukiah**—HOMES—Ben H. Hardister, 514 College Ave., Santa Rose, 200 homes on 114 acre site on Redwood Hy., $1,800,000.

▲ **Fla., Jacksonville**—BANK, OFFICE—Florida National Bank, 51 W. Forsythe St., bank and office on W. Adams St. $5,000,000.

▲ **Fla., Winter Park**—RESIDENCES—Tanglewood Homes, c/o Hugo R. Broleman, Jr., archt., 101 W. Pine St., Orlando, 600 residences. $4,000,000.

▲ **Ga., Augusta**—OFFICE—Jack J. Dorson & Assoc., c/o Scroggs & Ewing, archts., 1331 Green St., doctor's office bldg. $1,250,000.

▲ **Mich., Detroit**—SHOPPING CENTER—Federal Department Stores, Inc., 1200 E. Six Mile Rd., Highland Park, plans by Charles N. Agree, 1140 Book Bldg., Detroit, 100,000 sq. ft. Eastgate Shopping Center, incl. 4 or 5 buildings, department store, supermarket, health center, parking space, etc., Gratiot and 10½ Mile Rds. $2,000,000. CD 12/18/50.

▲ **Mich., Ecorse**—SHOPPING CENTER—Federal Department Stores, Inc., 1200 E. Six Mile Rd., Highland Park, plans by Charles N. Agree, 1140 Book Bldg., Detroit, 125,000 sq. ft. Southgate Shopping Center, incl. 5 buildings, department store, parking space, etc., on 80 acre site, Eureka and Trenton Sts. $2,500,000.

▲ **Minn., Minneapolis**—OFFICE—Lutheran Brotherhood Insurance Co., C. Granrud, pres., Pillsbury Bldg., plans by Perkins & Will, 309 E. Jackson Blvd., Chicago, Ill., 2 to 4 story office, 7 St. and Third Ave., $1,500,000. CD 5/28.

▲ **N. M., Las Vegas**—DWELLINGS—Howard Hughes, Las Vegas, 1,500 dwellings, $9,750,000.

▲ **N. Y., New York**—OFFICE—M. Lowenstein & Sons, Inc., 43 Leonard St., Zone 13, 18 story office at southeast corner of Broadway and 40 St. $5,000,000.

▲ **O., Cleveland**—SHOPPING CENTER—Federal Department Stores, Inc., 1200 E. Six Mile Rd., Highland Park, Mich., plans by Charles N. Agree, 1140 Book Bldg., Detroit, Mich., 100,000 sq. ft. Westgate Shopping Center, incl. department store, super market, drug store, health center, parking space, $2,000,000. CD 4/7/50.

▲ **R. I., East Providence**—SHOPPING CENTER—J. J. McHale & Sons Inc., 101 Ferris St., Pawtucket, plans by R. Milton Kenyon, 124 Taunton Ave., shopping center, 20 bldgs of modern design off Newport Ave. $2,500,000.

▲ **Tex., Houston**—OFFICE—Anderson-Clayton & Co., Cotton Exchange Bldg., plans by Milton Foy Martin, 3908 Main St., 8 story bsmnt., office, $2,750,000. CD 8/2/51.

▲ **Tex., Pasadena**—DWELLINGS—Embe Building Co., 6901 Almeda St., Houston, Unit 1, 35 dwellings, $350,000; Unit 2, 45 dwellings, $450,000; Unit 3, 50 dwellings, $500,000; Unit 4, 30 dwellings, $300,000; Unit 5, 45 dwellings, $450,000; Unit 6, 38 dwellings, $380,000. Edw. G. Pearson & Co., 1010 Winbern St., Houston, consult. engrs.

▲ **Tex., Port Arthur**—HOSPITAL—South County Hospital Foundation, Port Arthur, plans by Stone & Pitts, 1872 Calder St., Beaumont, 4 story masonry, 200-bed capacity hospital. $2,800,000.

▲ **Va., Norfolk**—HOUSES—Silvey Constr. Corp., 5301 E. Princess Anne Rd., 350 houses, $3,000,000.

▲ **Wash., Pasco**—DEPARTMENT STORE—Sears, Roebuck Co. 2650 E. Olympic Blvd., Los Angeles, Calif., plans by Walter Wagner, 1830 Van Ness Ave., Fresno, Calif., department store, $2,000,000. CD 8/11/48.

INDUSTRIAL BUILDINGS

▲ **Calif., Pittsburg**—FOUNDRY—Columbia Steel Div. of U. S. Steel Corp., Pittsburg, rebuild foundry to make army tank parts, $9,500,000.

▲ **Del., Wilmington**—LABORATORY—E. I. duPont de Nemours & Co., Inc., duPont Bldg., textile fibre laboratory. Approx. $1,000,000. H. M. Gordon, c/o owner, engr.

▲ **Fla., Miami Beach**—HOTEL—Ben Novak and Harry Mufson, 44 St. and Ocean Rd., Miami Beach, hotel, $8,000,000-$10,000,000.

▲ **N. M., Gallup**—PLANT—El Paso Natural Gas Co., C. C. Cragin, v. p., gen. mgr., Bassett Tower, El Paso, Tex. cracking plant, to include stills, etc. $2,000,000.

▲ **N. D., Williston**—PLANT—Amerada Petroleum Corp., Albert Jacobsen, Pres., 120 Broadway, New York, N. Y. natural gas plant. Approx. $1,000,000.

▲ **Okla., Coyle**—PLANT—Central Petroleum Co. of Tulsa, Jos. A. Moran, Thompson Bldg., Tulsa, natural gasoline plant, $1,000,000.

▲ **Tenn., Memphis**—WAREHOUSE—General Motors Corp., United Motor Service Div., Sterick Bldg., warehouse. $1,000,000.

▲ **Tex., Houston**—PLANT—Kilker Chemical Works, (Div. of Diamond Alkali Co.), Houston Ship Channel, 3rd plant unit to mfg. linedane, an insecticide. $1,000,000. CD 4/4.

UNCLASSIFIED

▲ **Arkansas** — RURAL DISTRIBUTION LINES — Carroll Electric Co-operative Corp., Berryville, 390 mi. rural distr. lines, sys. imprvs., $1,435,000. CD 4/1/49.

▲ **O., Cleveland**—RAPID TRANSIT SYSTEM—Cleveland Transit System, 1404 E. 9th St., Zone 14, excavation, heavy concrete work at station sites, retaining walls and const. 3 bridges on East Side rapid transit route. $1,500,000. Part of $30,000,000 rapid transit project. Morris W. Rew, c/o owner, ch. engr. CD 2/9/50.

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

Mass., Newton—B.A. 10/1—City, Street Comrs., City Hall, street constr. Adams St. to Watertown St. to Linwood Ave. $65,000. Plans deposit $10 refundable.

▲† Me., Limestone—BOMB HANDLING, STORAGE—B.A. 10/15—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., bomb handling, storage, Limestone Air Force Base, $1,000,000. CD 9/19/51.

BIDS ASKED—BUILDINGS

Vt., Rutland—SCHOOL—B.A. 9/30—City, Bd. School Comn., Rutland, elementary school, Eastern Highland Sect. $300,000. Plans deposit $25. Webber & Erickson, 56½ Merchants Row, Rutland, archts., Cleverdon, Varney & Pike, 120 Tremont St., Boston, Mass., engrs. CD 9/28/51.

N. H., Dover—HOSPITAL—B.A. 10/1—City, City Hall, hospital alterations to Wentworth Hospital. $650,000. Plans deposit $100. Extended date. Irving W. Hersey & Assoc., Dover Rd., Durham, archts. CD 9/8.

Mass., Worcester—DORMITORIES—B.A. 10/2—Holy Cross College, College St., two 4 story, bsmnt., dormitories. CD 11/19/51.

▲† Mass., Natick—LABORATORY—B.A. 10/4—U. S. Eng., 857 Commonwealth Ave., Boston, quartermaster research and development laboratory, Lake Cochituate, Eng. 19-016-53-8. Plans deposit $125 refundable. CD 8/29.

SOON LETS CONTRACT—BUILDINGS

Vt., Vergennes—FACTORY—Freeman, French & Freeman, archts., 138 Church St., Burlington, soon lets contract, factory for Simonds Aerocessaries, Inc., Main St., Approx. $130,000. Plans deposit $15.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—State Hy. Comn., Augusta,

Thomas DiCenzo, Calais, Me. CA $590,815. blt. con. road 10.66o mi., F. A. Secondary Proj. S 0338 (1), Caribou-Woodland-New Sweden K 14. Bids Sept. 10. CD 9/5.

NEW HAMPSHIRE—State Dpt. P. Wks. and Hys., Concord.

R. G. Watkins & Son, Inc., Mill Yard, Amesbury, Mass. LB **$359,417,** grading, drainage, road mix pave 0.852 mi. and 56 ft. rein.-con. R.R. overpass. U. S. 3, in Franklin. Bids Sept. 11. CD 9/3.

† U S. Eng., 857 Commonwealth Ave., Boston, Mass. rejected bids Aug. 25, helicopter testing apron, control house, storage facilities, laboratory, fence, ENG 19-016-53-16. LB. **$123,386.** MOUNT WASHINGTON, N. H. CD 8/29, under LB.

MASSACHUSETTS — Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

West End Iron Works, 110 Ringe Ave. Exten., Cambridge, Mass. CA **$779,908.** est. $750,000. constr. superstructure Hunt's Falls Bridge over Merrimack River, Lowell. CD 9/3 under LB.

Martin J. Kelly Co., Inc., 75 Stedman St., Jamaica Plain, Mass. CA **$517,540.** Est. $500,000. concrete deck bridge Broadway over Fort Point Channel, BOSTON, MASS. City, Dpt. P. Wks., City Hall Annex, Boston, Mass. CD 9/9 under LB.

Fanning & Doorley Constr. Co. Inc., 274 Kinsley Ave., Providence, R. I. LB. **$44,774,** water mains, extens. PROVIDENCE, R. I. City, City Hall, Providence, R. I. Bids Sept. 8. CD 9/4.

BUILDINGS

LOW BIDS AND CONTRACTS

Joseph Rugo, Inc., 581 Boylston St., Boston, Mass. LB. **$365,258.** est. $350,000. FIRE STATION, Fort Hill Square, BOSTON, MASS. City, Fire Dpt., 115 Southampton St., Roxbury, Mass. Bids Sept. 12. CD 8/27.

Harry Spector, Inc., 606 Statler Bldg., Boston, Mass. LB. **$363,100.** est. $402,000. H-401 EXPERIMENTAL BLDG. LAWRENCE, MASS. State, Dpt. P. Health, State House, Boston, Mass. Bids Sept. 12. CD 8/26.

▲ City, City Hall, Lawrence, Mass. rejected bids Aug. 13, elementary school, Providence, Milton and Butler Sts., LAWRENCE, MASS. LB **$1,361,000.** Will readvertise. CD 8/19 under LB.

J. F. Rand & Son, 57 Sudbury St., Boston, Mass. LB **$626,158.** est. $600,000. Beethovan SCHOOL, Beethoven Ave., Newton Center, NEWTON, MASS. City, P. Bldgs. Comn., City Hall, Newton, Mass. Bids Sept. 10. CD 9/3.

Concrete Constr. Co., 11 Garfield Ave., Chelsea, Mass. CA **$954,490.** Mass 20018 veterans' HOUSING rear of 200-A, REVERE, MASS. Revere Housing Auth., 70 Coolidge St., Revere, Mass. Bids Aug. 22, awarded Sept. 12. CD 8/29.

▲ George A. Fuller Co., 11 Beacon St., Boston, Mass. CA est. **$1,400,000.** HOSPITAL addn., ROXBURY, MASS. New England Baptist Hospital, 91 Park Hill Ave., Roxbury, Mass. CD 7/30.

Rich Bros. Constr. Co., 410 Park Square Bldg., Boston, Mass. CA **$790,141.** est. $800,000. M-221 Contr. 1, State HOSPITAL addn., WRENTHAM, MASS. State, Dpt. Mental Health, 15 Ashburton Pl., Boston, Mass. CD 5/13 under LB.

MIDDLE ATLANTIC

BIDS ASKED—BUILDINGS

Pa., Pittsburgh—SCHOOL—B.A. 10/1—Baldwin Twp. Municipal Auth. School Dist., Clairton Rd., 2 story 55x175 ft. brick, block grade school addns. Baldwin Twp. $400,000. Plans deposit $25. Altenhof & Bown, 1230 Park Bldg., archts. CD 3/6.

Pa., Coraopolis—HIGH SCHOOL—B.A. 10/7—School Dist. of Moon Twp., R.D., Coraopolis, 1 story block high school. $425,000. Plans deposit $25. Button & McLean, 119 E. Montgomery St., N. W. Pittsburgh, archts.

† N. J., Pennsauken—ARMORY—Bids Asked—U. S. Eng., 121 N. Broad St., Phila., Pa. O.R.C. armory, motor vehicle storage shed, grading, paving and site utilities. $100,000. Edwards & Green, 17 S. 5 St., Camden, archts.

SOON LETS CONTRACT—BUILDINGS

Pa., Nesquehoning—FACTORY—Panther Valley Mfg. Co. Inc., 2204 Walnut St., Phila., soon lets contract, factory. $425,000. Erlington Wenge, 414 McClatchy Bldg., Upper Darby, archt.

Pa., Phila.—PLANT—Aikin & Vanderwerff, engrs., 703 Walnut St., soon lets contract meatpacking plant for Jacob Sandler, c/o engr. $95,000.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† Verona Constr. Co., 22 Cliff St., Verona, N. J., CA **$929,654.** storm sewers, FORT DIX, N. J. Dpt. Army, 121 N. Broad St., Phila., Pa. John L. Kistner Co., Harrison Bldg., Phila., Pa., engrs. CD 6/19.

PENNSYLVANIA—State Hy. Dpt., 506 North Office Bldg., Harrisburg,

Putnam & Greene, Inc., Box 2012, Fort Wayne 3, Ind., LB **$564,377,** widen and overlay 42,353 ft. existing pavement with crushed aggregate base and bit. surf. 22 ft. wide, T.R. 255, Elk Co.;

Depue & Diehl, R. D. No. 3, Tamaqua, Pa., LB **$110,810.** const. 4,240 ft. crushed aggregate base with bit. surf. and widen. existing pavement T.R. 902, Carbon Co. Bids Sept. 12. CD 8/22.

R. S. Noonan, Inc., 26 N. Duke St., York, Pa., CA **$375,000.** 2 service stations and restaurants, (remodeling and addns.) one at Path Valley and other at Cove Valley. Bedford Co. PENNSYLVANIA. Esso Standard Oil Co. of Penna. 21 S. 12 St., Phila., Pa., L. C. Taliffero, c/o owner, engr.

Armour Excavating Co., 7921 Oxford Ave., Phila., Pa., LB **$124,601.** water mains on Gorgas Lane, etc.;

Union Paving Co., Broad and Stiles Sts., Phila., Pa. LB **$129,348.** water mains, Brocklehurst St. PHILA., PA. Dpt. of Procurement, City Hall Annex, Phila., Pa. Samuel S. Baxter, c/o owner, Water Comr. engr. CD 11/24/44.

Acchione Contrg. Co., 1607 McKean St., Phila., Pa., LB **$144,686.** Pauls Run Intercepting sewers.

Larry DeMayo, 747 S. 8 St., Phila., Pa., LB **$60,507,** sewers various locations, Schedule C-1. PHILA., PA. Dpt. of Procurement, City Hall Annex, Phila., Pa. Samuel S. Baxter, c/o owner, Water comr. CD 3/11/46.

Eastern Asphalt Co., Packard Bldg., Phila., Pa., LB **$109,659,** paving, various locations, Schedules A-6 and C-2; LB **$61,184,** paving various locations, Schedules C-5, F-12 and C-6; LB **$83,718,** paving various locations. Schedules C-6 and H-5;

Harry C. Erb, 29 Bala Ave., Bala, Pa., LB **$60,963.** paving various locations, Schedule 1;

General Asphalt Paving Co., 6851 Rising Sun Ave., Phila., Pa., LB **$67,226,** paving various locations, Schedule A-3 and B-1; LB **$125,642,** paving various locations, Schedules B-5 and D; LB **$67,785,** paving various locations, Schedules B-4;

Mack Paving & Constr. Co., C and Luzerne Sts., Phila., Pa., LB **$91,879,** paving various locations, Schedules B-3, C-3, F-4 and F-8;

James D. Morrissey, 9119 Frankford Ave., Phila., Pa., LB **$66,029,** paving various locations, Schedules F1-2-5 and 7; LB **$61,358,** paving various locations, Schedules F9-10, 13 and 6; LB **$64,996,** paving various locations, Schedule A-4;

State Paving & Constr. Co., 1924 Arch St., Phila., Pa. LB **$90,840,** paving various locations, Schedules A-7 and B-2;

Union Paving Co., 1227 N. Broad St., Phila., Pa., LB **$167,950,** paving various locations, Schedules A-1 and A-5; LB **$74,197,** paving various locations, Schedule C-4; LB **$62,853,** paving various locations, Schedule C-1.

Ernest Ventresca & Son, 5600 Bingham St., Phila., Pa., LB **$199,910,** grading, and sewer Veree Rd. etc. PHILA., PA. Dpt. of Procurement, City Hall Annex, Phila., Pa., Samuel S. Baxter, Water Comr., engr. CD 10/30/44.

Union Paving Co., Broad and Stiles Sts., Phila., Pa. LB **$96,977,** resurf. runways at International Airport., PHILA., PA. Dpt of Procurement, City Hall Annex, Phila., Pa. CD 2/19/46.

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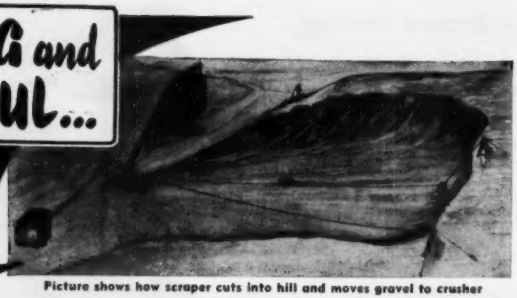

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BUILDINGS

LOW BIDS AND CONTRACTS

C. W. C. Consrt. Corp., 105 Court St., Brooklyn 2, N. Y. CA $517,300, Central Manhattan REPAIR HEADQUARTERS, for Dpt. Water Supply, Gas & Electricity at Franklin D. Roosevelt Dr., between E. 37 and E. 38 Sts. NEW YORK, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids Aug. 13. CD 8/21 under LB.

Carteret Dwellings, c/o William G. Chirgotis, archt., 968 Stuyvesant Ave., Union, N. J. Owner Builds. $600,000. 60 HOUSES on tract on Tyler Ave. CARTERET, N. J.

Hedges Diesel Co., Inc., Marlton, N. J., Separate Contracts. Approx. $100,000. 1 story 60x120 ft. FACTORY, 2 story 30x60 ft. office, both of brick and block const., MARLTON, N. J. Howard E. Hall, 840 Cooper St., Camden, N. J., archt.

Louis H. Cahan & Co. Inc., Market St. Natl. Bank Bldg., Phila., Pa., Separate Contracts. $300,000. Mayfair House APARTMENT, Edgewood Ave. and Tenape Rd., TRENTON, N. J.

John McShain, Inc., 1750 N. Olden Ave., Trenton, N. J. CA. $442,700. Superstructure, CATHEDRAL, TRENTON, N. J. Episcopal Diocese of New Jersey, W. State St. and Overbrook Ave., Trenton, N. J. Bids Sept. 5. CD 9/10.

Fred Lundgren, R. D. 5, Kittanning, Pa., CA approx. $338,629, 1 story brick, block grade and HIGH SCHOOL addn., KARNES CITY, PA. Joint Auth. of Fairview Twp. and Karnes City, Karnes City, Pa. Howard & Murphy, Mellon Bank Bldg., Butler, Pa., archts.

Frank H. Wilson Co., 125 Coulter Ave., Ardmore, Pa., CA. $100,000. 1 story masonry irregular dimensions, BLDG. MARCUS HOOK, PA. Sun Oil Co. 1600 Walnut St., Phila., Pa. CD 7/16.

Guy Miller, 1618 Robinson Blvd., Pittock, Pa. CA. $964,629, seven 3 story bsmnt. brick veneer Federal HOUSING Proj. 5609. McKEES ROCKS, PA. Allegheny County Housing Auth., County Office, Pittsburgh, Pa. Bids Aug. 28. CD 9/8, under LB.

Baton Constr. Co., 1717 Sansom St., Phila., Pa., LB $272,000. BAKERY STORAGE, garage and offices, NORRISTOWN, PA. Stroehmann Bros. Co., 757 Kohn St., Norristown, Pa. Bids Aug. 29. CD 8/21.

William F. Lotz, Inc., Adams Ave. and Orthodox St., Phila., Pa., CA. $83,000. SHIPPING BLDG., storage bldg. and alterations receiving bldg., brick and masonry const. PHILA., PA. Livingston & Co., D and Luzerne Sts., Phila., Pa.

George C. Meyer, 1225 Longshore St., Phila., Pa., CA. $300,000. RESIDENTIAL development, Bennington St., PHILA., PA. Juniata Housing Corp., 1225 Longshore St., Phila., Pa. H. Stanley Atkinson, 10 S. 18 St., Phila., Pa., archt.

George K. Heebner Inc., 1241 Vine St., Phila., Pa., CA $250,000. Repackaging WAREHOUSE and railroad siding, PHILA., PA. E. I. duPont de Nemours & Co., Inc., DuPont Bldg., Wilmington, Del. Joseph J. Rauch, 1231 Vine St., Phila., Pa., archt. CD 5/9/49.

Haverstick Borthwick Co., 3416 N. Sydenham St., Phila., Pa., CA $250,000. 2 story 120x197 ft. brick, cinder block MFG. BLDG., WAREHOUSE, PHILA., PA. Bunting Glider Co., 18 and Allegheny Ave., Phila., Pa. CD 8/28.

Edward J. Walsh, Inc., 111 Fairfield Ave., Upper Darby, Pa. Separate Coutracts. $800,000. RESIDENTIAL development, Palmer Lane, etc., WALLINGFORD, PA.

▲ **B. J. Lucarelli & Co. Inc.**, 22 Orchard St., Jersey City, N. J., LB $1,408,000. Parkway HOMES, Project LB $434,384, Codorous Homes Proj., YORK, PA. York Housing Auth., 360 W. College Ave., York, Pa. Bids Sept. 9. CD 8/15.

† **U. S. Eng.**, 24 St. and Maryland Ave., Baltimore 18, Md., cancelled bids to have been opened Sept. 26. low temperature test chamber, Army Chemical Center, ENG 18-020-53-6, EDGEWOOD, MD. CD 8/27.

American Building Co., 20 S. 42 St., Phila., Pa. Separate Contracts. est. $350,000. RESIDENTIAL DEVELOPMENT, S. Clayton St., WILMINGTON, DEL.

Rice Bros., 21 Ayer St., Newport, Del. Separate Contracts. est. $300,000. RESIDENTIAL DEVELOPMENT Northwood Section, WILMINGTON, DEL.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

N. C., High Point—B.A. 10/3—City, T. E. Hinson, city mgr., High Point, sewer and water imprvs. Plans deposit $25. Wm. F. Freeman Engrs., High Point, engrs. CD 4/5/46.

† **La., Shreveport**—ELECTRIC DISTRIBUTION SYSTEM—B.A. 10/10—U. S. Eng., 300 Broadway, Little Rock, Ark., Job No. AFB 52-ACRP-AF electric distr. sys., Barksdale Air Force Base, Eng. 03-050-53-6, Geo. C. Hengy & Co., 228 N. Market St., archts. and engrs. CD 5/2/51.

† **La., Alexandria**—UTILITIES—B.A. On Or About 10/17—U. S. Eng., 300 Broadway, Little Rock, Ark., Job. No. AFB-52-ACRP-AF rehabilitation of existing utilities, Alexandria Municipal Airport, Eng. 03-050-53-20.

† **La., Shreveport**—RELAY RAIL—B.A. On Or About 10/17—U. S. Eng., 300 Broadway, Little Rock, Ark., furnishing relay rail, Louisiana Ordnance Plant, Eng. 03-050-53-21.

† **La., New Orleans**—DEHUMIDIFICATION AND ELECTRICAL SYSTEMS—B.A. 10/21—U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex., dehumidification and electrical sys., Michoud Ordnance Plant, Eng. 41-243-53-34.

† **Va., Oceana**—OPERATIONS BLDG. etc.—B.A. 10/21—P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone, 11, operations bldg., garage and supply bldg. at the U. S. Naval Air Station, Spec. 35773. NOY 74836. Plans deposit $100. CD 2/15/51.

† • , **Alexandria**—BASE COMMUNICATIONS BLDG.—B.A. On Or About 10/22—U. S. Eng., 300 Broadway, Little Rock, Ark., Job. No. AFB 52-ACRP-AP base communications bldg., Alexandria Municipal Airport, Eng. 03-050-53-19.

† **La., Alexandria**—BULK STORAGE FACILITIES—B.A. On Or About 10/23—U. S. Eng., 300 Broadway, Little Rock, Ark., Job. No. AFB-52-ACRP-AF bulk storage facilities, Alexandria Municipal Airport, Eng. 03-050-53-22.

Ala., Phenix City—B.A. after 11/1—City, WW imprvs., $600,000, 812 S. 27 St., Birmingham engrs. CD 10/28/47.

BIDS ASKED—BUILDINGS

Ga., Savannah—FARMERS MARKET—B.A. 9/30—State Dpt. of Agriculture, State Capitol, Atlanta, farmers market. $300,000. CD 9/10.

† **Ala., Tuscaloosa**—HEATING PLANT—B.A. 10/1—Dpt. Navy, Officer in Charge of Constr., Box 365, Naval Base, S. C., installation of heating sys. at Naval Reserve Training Center, NOY 75255. Extended date. CD 9/4.

Fla., Gainesville—CLASSROOM BLDG.—B.A. 10/7—State Bd. Control, Gainesville, classroom bldg. for School of Business Admin. $450,000. Guy C. Fulton, University of Florida, Gainesville, archt. CD 8/12.

La., New Orleans—PLANT OFFICE—B.A. 10/8—At office Herbert A. Benson and George Reihl, archts., 1048 National Bank of Commerce Bldg., New Orleans, alterations, repairs, addns., modernization, plant office, 127 Elks Place, for Gulf Refining Co., Maison Blanche Bldg., New Orleans, La. $750,000. CD 9/10.

▲ **Va., Norfolk**—HIGH SCHOOL—B.A. 10/10—Norfolk Co. School Bd., 148 Granby St., 1 and 2 story brick, concrete masonry Norfolk County High School. $1,400,000. Plans deposit $75. Walford & Wright, 103 E. Cary St., Richmond, archts. CD 6/26.

HEAVY CONSTRUCTION
LOW BIDS AND CONTRACTS

Southern Bell Telephone Co., Hurt Bldg., Atlanta, Ga. Owner Builds. $500,000. telephone conduits and cable, COLUMBIA, S. C.

† **Hall Constr. Co.**, 664 Spring St., N. W., Atlanta, Ga., LB $241,489, administration bldg., Turner Air Force Base. Eng 09-133-52-78. ALBANY, GA. U. S. Eng., Post Office Bldg., Albany, Ga. Bids Sept. 10. CD 9/4.

† **Shafter Constr. Co.**, Hinesville, Ga., LB $454,267, addnl. site facilities, Eng 09-133-53-6. CAMP STEWART, GA. U. S. Eng., Post Office Bldg., Savannah, Ga. Bids Sept. 8. CD 8/6.

Giller Contrg. Co., 523 Michigan Ave., Miami Beach, Fla., CA. $62,282, sidewalks, curbs and gutters for highway imprvs., MIAMI BEACH, FLA. City, City Hall, Miami Beach, Fla. M. N. Lipp, c/o owner, city engr. CD 6/20.

BUILDINGS
LOW BIDS AND CONTRACTS

Eugene Simpson & Bros., 300 Montgomery St., Alexandria, Va., CA. $771,844, Gar-Field HIGH SCHOOL, Dumfries, MANASSAS, VA. Prince William County School Bd., Manassas, Va. Bids Aug. 28. CD 9/3, under LB.

Doyle & Russell, 823 W. 21 St., Norfolk, Va., CA $459,900. 2 story brick, concrete masonry HOME for the AGED, NORFOLK, VA. Mary N. Ballentine Home, Granby St., Norfolk, Va. Bids Sept. 9. CD 8/14.

Blaw-Knox Co., Farmers Bank Bldg., Pittsburgh, Pa. CA. Approx. $750,000. CHEMICAL PLANT SUNBRIGHT, VA. Foote Mineral Co., c/o contractor. CD 6/17.

John R. Taylor Co., Greensboro, N. C. Owner Builds. Approx. $500,000. 72 RESIDENCES on High Point Rd., GREENSBORO, N. C.

Chattahoochee Holdings, Inc., 926 Chattahoochee Ave., N. W. Atlanta, Ga. CA. Approx. $500,000. WAREHOUSE. ATLANTA, G. A. & P. Tea Co., 881 Memorial Dr., S. E., Atlanta, Ga.

Talon, Inc., Meadville, Pa., Owner Builds. $100,000. PLANT, CLEVELAND, GA.

Homebuilders Corp., Centerville Rd., Warner Robins, Ga. Owner Builds. $500,000. 100 RESIDENCES, WARNER ROBINS, GA.

Shinn Constr. Co., 12345 W. Dixie Hy., North Miami, Fla., CA. $175,189, auto SALES, SERVICE and storage bldg., BAY HARBOR ISLANDS, FLA. Nolan-Brown Motors, Inc., 2044 Biscayne Blvd., Miami, Fla. Gamble, Pownall & Gilroy, 1407 E. LasOlas Blvd., Fort Lauderdale, Fla., archts.

James V. Warnock, 8045 Abbott Ave., Miami Beach, Fla. CA. $320,000, 2 story 90x187 ft. CB-S APARTMENT, 51 units, MIAMI BEACH, FLA. Malaluka, Inc., 9205 Collins Ave., Miami Beach, Fla. M. M. Ungaro, 814 Olympia Bldg., Miami, Fla., archt.

J. T. Gooch Co., Inc., 1205 Congress Bldg., Miami, Fla., CA. $300,000. EXCHANGE bldg., MIAMI BEACH, FLA. Southern Bell Telephone & Telegraph Co., 36 N. E. 2nd St., Miami, Fla. J. Warren Armenstead, Jr., 1330 Candler Bldg., Atlanta, Ga., archt.

T. Miller & Sons, Lake Charles, La. LB est. $450,000. Geo. Washington Carver High SCHOOL, DE RIDDER, LA. Crosby Chemicals, Inc., De Ridder, La. Bids Sept. 9. CD 9/10.

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MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

Ill., Monsanto (East St. Louis P.O.)—B.A. 9/30—Village, Bd. Trustees, Leo Sauget, Pres., Village Hall, Falling Spring Rd. and Midwest Ave., sewage pumping station addn., east of Gulf, Mobile and Ohio R. R. tracks. Plans deposit $25. Architectural Engineers, Inc., Metropolitan Bldg., East St. Louis, engrs. CD 7/3/51.

▲ **OHIO**—B.A. 10/15—Ohio Turnpike Comn., 361 East Broad St., Columbus, Zone 15,

Summit Co.—twin bridges, 2,700 ft. long across the Cuayhoga River Valley, substructure only, 12 piers and 2 abutments for each bridge, the highest pier to be 136 ft. above valley floor. $5,000,000. Thomas J. Kauer, Turnpike Comn. Engr. CD 7/8, under Streets and Roads.

BUILDINGS

LOW BIDS AND CONTRACTS

† **George Bahre Co.**, 1015 Southeastern St., Indianapolis, Ind., LB $535,363, conversion to TB HOSPITAL Proj. 13-5086, INDIANAPOLIS, IND. Veterans Admin., Munitions Bldg., Wash. D. C. Bids Sept. 9. CD 7/24.

Carle E. Erickson Co., 4657 N. Ravenswood Ave., Chicago 40, Ill. CA. $900,000. 32 units APARTMENT at 1508 Hinman Ave., EVANSTON, ILL. Owner, c/o Ralph Harris, archt., 53 W. Jackson St., Chicago 4, Ill. Awarded Sept. 8. CD 10/18/51 under LB.

Coath & Goss, 5103 W. Lake St., Chicago, Ill., CA. $518,000. North SCHOOL, GLENCOE, ILL. School Dist. No. 35, 266 Linden St., Glencoe, Ill. Bids Aug. 25, Awarded Sept. 4. CD 9/12 under LB.

J. Emil Anderson & Sons Co., 1809 Balmoral St., Chicago 40, Ill. CA. $900,000. 85,000 sq. ft. FACTORY, mfg. auto polishes, KANKAKEE, ILL. The Simoniz Co., 2100 S. Indiana Ave., Chicago, Ill. Arthur M. Heda, 1809 Balmoral Sa., Chicago 40, Ill., archt. Awarded Sept. 4. CD 7/30.

Peterson Constr. Co., 616 National Bldg., Minneapolis, Minn. CA. $918,000. Catholic HIGH SCHOOL, EAU CLAIRE, WIS. St. Patricks Regis High School, 322 Fulton St., Eau Claire, Wis. Bids Aug. 27. CD 9/10 under LB.

Walter A. Couse & Co., 12740 Lyndon St., Detroit, Mich. CA est. $500,000. 1 story, brick, steel processing PLANT, Hoover Rd., DETROIT, MICH. Bliss & Laughlin, Inc., 3-223 General Motors Bldg., Detroit, Mich. Bids June 16. CD 6/12.

Co-operative Building Mechanics, Inc., 14622 E. Seven Mile Rd., Detroit, Mich. Owner Builds. Est. $750,000. sixty-nine 1½ story frame HOUSES, ROSEVILLE, MICH.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

† **Missouri**—B.A. 10/1—U. S. Eng., P. O. Box 97, Memphis 1, Tenn., 11,000 cu. yd. embankment Levee Item No. R-194 SFR Bucoda, Levee stations, 33 plus 15 to 00, 34 plus 10 to 50, 36 plus 24 to 88, 36 plus 44 to 00, 37 plus 22 to 48, along St. Francis River levee at 5 separate sites in Levee Dist. No. 4 Dunklin Co., 3 mi. west and 1½ mi. north of Bucoda, CIVENG 40-041-53-38. CD 6/1/44.

Okla., Davenport—B.A. 10/1—City, reservoir, pipe line and filter plant. $60,000. Plans deposit $10. Lee M. Bush & Co., Colcord Bldg., Oklahoma City, engrs.

† **Arkansas**—B.A. 10/2—U. S. Eng., P. O. Box 60, Vicksburg, Miss., Lot I, Arkansas River bank stabilization works, standard revetment and pile dike constr., Item DR-91-I-L above Plum Bayou; Lot II, Arkansas River bank stabilization works, pile dike constr. Item D-87.3-R below Rob Roy, CIVENG 22-052-53-22. CD 6/25/46.

† **South Dakota**—TRANSMISSION LINE—B.A. 10/2—Bureau Reclamation, Dpt. Interior, Huron, Oahe-Midland 115-kilovolt transmission line, Transmission Div., Spec. No. DC-3781. Extended date. CD 8/26.

† **S. D., Rapid City**—ELECTRIC UTILITIES—B.A. 10/3—U. S. Eng., 1709 Jackson St., Omaha, Neb. electric utilities at Rapid City Air Force Base. Inv. 25-66-53-40. CD 11/12/51.

Okla., Wagoner—B.A. 10/6—City, sanitary lateral sewers. $71,000. Wood & Craig, Philtower Bldg., Tulsa, engrs.

† **Tex., Lubbock**—BUILDINGS—B.A. 10/6—U. S. Govt., c/o Purch. & Contg. Officer, Reese Air Force Base, 2 metal bldgs. Inv. No. 41-620-53-8. $85,000. CD 8/30/51.

Kan., Manhattan—B.A. 10/7—City, sanitary sewer extensions. Wilson & Co., 223 N. Santa Fe St., Salina, engrs. Extended date. CD 9/10.

† **Texas**—B.A. 10/8—U. S. Eng., 100 W. Vickery St., Fort Worth, Tarrant County Road relocation Rd. No. 2 at Benbrook Dam and Reservoir, Inv. No. CIVENG 41-443-53-9, Tarrant Co. $100,000. CD 12/2/44.

† **Oklahoma**—B.A. 10/9—U. S. Eng., Box 61, Tulsa, Zone 2, levee and bank protection, Sallisaw Co. Eng 34-066-53-21, $175,000.

† **Okla., Enid**—RADIO AIR GROUND FACILITIES—B.A. 10/9—U. S. Eng., Box 61, Tulsa, Zone 2, UHF radio air-ground facilities, remote receiver bldg., outside electrical distr. sys., access roads and appurtenances. Inv. No. Eng 34-066-53-29. $100,000.

BIDS ASKED—BUILDINGS

Mo., Columbia—STUDENT CENTER—B.A. 10/2—Presbyterian Student Assoc., c/o Rev. Charles Pratt, Minister, First Presbyterian Church, 100 Hitt St., 2 story, bsmnt., 66x100 ft., brick, steel Presbyterian Student Center. Plans deposit $25. Extended date. Froese, Maack & Becker, 705 Olive St., St. Louis, Zone 1, archts. CD 9/4.

▲† **Tex., Corpus Christi**—HOUSING—B.A. 10/7—U. S. Govt., P. Wks. Office, Civil Engineer, 8th Naval Dist. Bldg. 16, New Orleans, La., construct, manage, finance, 340 housing units. $2,650,000. CD 5/23/51.

Tex., Denton—SCHOOL—B.A. 10/9—Denton Independent School Dist., Denton, Stonewall Jackson Elementary School. $300,000. Plans deposit $25. Wyatt C. Hedrick, 904 Fort Worth Ave., Dallas, archt. CD 5/15.

Tex., Colorado City—SCHOOL—B.A. 10/11—Colorado Independent School Dist., Colorado City, masonry, concrete pier and beam fdn., cast stone trim (colored) school. $325,000. Plans deposit $35. Don W. Smith, Sweetwater, archt. CD 3/25.

Tex., Mercedes—HEADQUARTERS BLDG.—B.A. 10/14—Magic Valley Electric Co-operative, Inc., Mercedes, headquarters bldg., incl. warehouse-garage. $210,000. Wm. C. Baxter, Pioneer Bldg., Weslaco, archt. CD 9/5.

† **N. M., Las Cruces**—WAREHOUSES—B.A. About 10/16—U. S. Eng., P. O. Box 1538, 2108 E. Central Ave., Albuquerque, three 52x273 ft. concrete frame masonry panel warehouses, White Sands Proving Ground, Serial No. Eng 29-005-53-32. Plans deposit $50. CD 8/28/51.

† **N. M., Albuquerque**—HOSPITAL—B.A. 10/21—Veterans Admin., Munitions Bldg., Wash., D. C., Bldg. No. 3 addn. and alterations for Veterans Admin. Hospital. Proj. 13-40-42.

† **N. M., Las Cruces**—TESTING FACILITIES, etc.—B.A. About 10/23—U. S. Eng., P. O. Box 1538, 2108 E. Central Ave., Albuquerque, rocket testing facilities, 2 story 47x57 ft. rein.-con. frame with masonry panels flight control bldg., air-conditioned, technical type bldg., White Sands Proving Ground. Serial No. Eng. 29-005-53-1. Plans deposit $50. CD 8/28/51.

Minn., Rochester—PLANT—Bids Asked—Libby McNeill & Libby, Union Stock Yards, Chicago 9, Ill., 40,000 sq. ft. processing plant and warehouse, $350,000.

▲ **Tex., Houston** — PLANT — Bids Asked — Mathieson Chemical Corp., 2nd Natl. Bank Bldg., phosphatic fertilizer plant. $1,811,292. CD 2/21/51.

▲ **Tex., Houston**—PLANT—Bids Asked—Phillips Chemical Co., City Natl. Bank Bldg., phosphatic fertilizer plant. $3,086,050.

SOON LETS CONTRACT—BUILDINGS

Minn., St. Paul—GARAGE—Sixth and St. Peter Street Corp., 200 Hamm Bldg., soon lets contract, 2 story, bsmnt., sub-bsmnt., 150x150 ft., ramp parking garage, West 6 St. and St. Peter St., $750,000, L. J. Johnson, 219 Hamm Bldg., archt. CD 8/24/44.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

St. Louis Park Constr. Co., 1415 SE 8 St., Minneapolis, Minn. LB $693,825. sanitary sewers extens. Imprv. Nos. 52-251 through 52-297 and No. 52-413, ST. LOUIS PARK, MINN. Village, J. Justad, clk., St. Louis Park, Minn. Bids Sept. 2. CD 9/16.

▲ **Elliott Constr. Co.**, Redick Tower, Omaha, Neb. CA $1,338,056. general contract; substations, northwest section, MISSOURI. Northwest Electric Power Cooperative, Cameron, Mo. CD 9/3 under LB.

† **Seth Glem & Assoc.**, Land Bank Bldg., Springfield, Mo. LB $687,713. est. $700,638. bachelor officers quarters, mess, 4 bldgs., Grandview Air Force Base, Eng. 23-028-53-6, GRANDVIEW, MO. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Sept. 5. CD 8/12.

Tri-State Constr. Co., Fairmont, Minn., LB $61,822, runway and taxiway repairs at Municipal Airport, PIERRE, S. D. City, J. W. Inli, Aud., Pierre, S. D., Brady Engr. Co., Spearfish, S. D., engrs. Bids Sept. 2.

† **Kansas City Bridge Co.**, 928 Broadway, Kansas City, Mo. LB $506,977. est. $425,625. pile dikes, revetment, repairs adjacent to Missouri River Kichkapoo to Weavers Bends, near Leavenworth, Leavenworth Co., CIVENG 23-028-53-38, KANSAS. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Sept. 11. CD 6/1/44.

OKLAHOMA—State Hy. Dpt., Capitol, Oklahoma City, Zone 5,

Quapaw Constr. Co., Quapaw, Okla., LB $143,765. est. $127,100, double bit. surf. 3.03 mi. on No. 60 near Vinita, Craig Co.

H. J. Hoppel Co., 5501 E. Admiral St., Tulsa, Okla., LB $119,782. est. $130,000. Sect. 1, Joy Creek Sanitary sewer, TULSA, OKLA. City, City Hall, Tulsa, Okla. Bids Aug. 26. CD 8/20.

Colglazier & Hoff, Inc., Rte. 10, Box 46, San Antonio, Tex., LB $61,347. asphalt street paving, ALAMO HEIGHTS, TEX. City, City Hall, 6116 Broadway, Alamo Heights, Tex. Walter H. Lilly Transit Tower, San Antonio, Tex., Bids Sept. 2.

Lee Cantrell Co., San Diego, Tex., CA. $63,000. est. $60,000, grading, flexible base, surf. tr. 3 mi. road Precinct 2, CORPUS CHRISTI, TEX. Nueces County, Court House, Corpus Christi, Tex. J. R. Laurence, Co. Engrs. Bids Apr. 25, Awarded Sept. 10.

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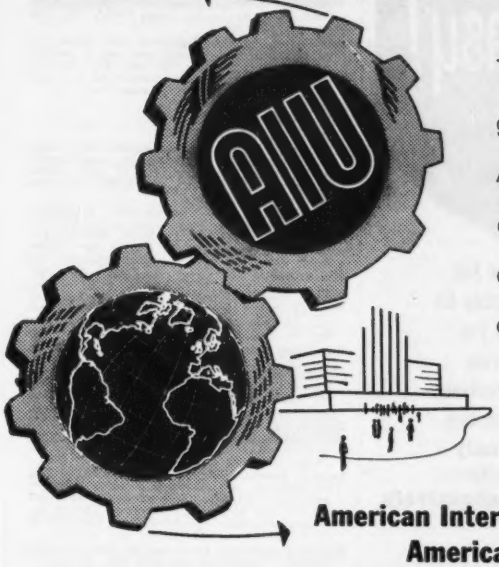

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† **Burnett Constr. Co.,** Box 336, Corpus Christi, Tex. LB $536,000, aircraft storehouse; LB $61,150, railway spur; LB $82,250, access road and loading apron, Cont. Nov 72201 at Naval Air Station, CORPUS CHRISTI, TEX. U. S. Govt., Officer in Charge of Const., Naval Air Station, Corpus Christi, Tex. Bids Aug. 19. CD 7/29.

Cole Williams, Inc. 7903 Manderville Lane, Dallas, Tex. CA. $533,060. 1-mi. sanitary sewer sect. of proposed 5-Mile White Rock Project. DALLAS, TEX. City, City Hall, Main and Harwood Sts., Dallas, Tex. Bids Sept. 9; Awarded Sept. 11. CD 9/10 under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

G. Madsen Constr. Co., 4916 Sunnyslope Rd., Edina, Minn. CA $512,500. General contract, grade SCHOOL, existing high SCHOOL addn., FOREST LAKE, MINN. Bd. Educ., H. M. Handrum, clk., Forest Lake, Minn. Bids Sept. 5. CD 8/27.

Peterson Constr. Co., 516 National Bldg., Minneapolis, Minn. LB $629,400. General contract; OFFICE 3100 W. Lake St., MINNEAPOLIS, MINN. Ministers Life and Casualty Union, 100 W. Franklin Ave., Minneapolis, Minn. Bids Aug. 28. CD 8/13.

John H. Hoerter, 4972½ Fyler Ave., St. Louis 9, Mo. CA 1 story, 50x80 ft., 12x14 ft., brick, concrete WAREHOUSE and OFFICE, 3520-22 Hampton Ave., ST. LOUIS, MO. Venetian Tile Co., 5011 Manchester Ave., St. Louis 10, Mo. John Wunderlich, 3524 Lawn Ave., St. Louis 9, Mo., archt.

Fruin-Colnon Contg. Co., 1706 Olive St., St. Louis 3, Mo. CA 1 story, 321x352 ft., 90x161 ft. WAREHOUSE addn., 819 E. Taylor Ave., ST. LOUIS, MO. Hussman Aircraft Division of Hussman Refrigerator Co., 819 E. Taylor Ave., St. Louis 15, Mo. John A Thompson, 1706 Olive St., St. Louis 3, Mo., archt.

D. C. Bass & Sons, Bass Bldg., Enid, Okla., CA. $425,930. RESEARCH LABORATORY and engineering bldg., DUNCAN, OKLA. Halliburton Well & Cementing Co., Duncan, Okla. CD 7/25.

Leslie F. Crockett Constr. Co., Box 4036, Austin, Tex., LB $136,190. Est. $200,000. 1 and 2 story concrete frame and fdn., brick exterior LABORATORY and facilities. AUSTIN, TEX. Jefferson Chemical Co. of New York, Dallas Hy., Austin, Tex. Bids Sept. 4. CD 8/29.

Busboom & Rauh, 1910 Forest Park Rd., Dallas, Tex., LB $89,100. WAREHOUSE and parts bldg., GREGGTON, TEX. Nichols Rental Co., 1311 S. Ervay St., Dallas, Tex. George W. Edwards, 1509-A Cochran St., Dallas, Tex., archt. Bids Sept. 10.

Phillips Petroleum Co., Bartlesville, Okla. cancelled bids to have been opened July 22, Project indefinitely postponed, WAREHOUSE, $145,000; shop, $200,000. HOUSTON, TEX. CD 7/18.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

† **Washington**—B.A. 10/2—Bureau Reclamation, Dpt. Interior, Ephrata, blanketing and membrane lining, lateral area E-1, Columbia Basin Proj., Spec. 117C-165.

Oregon—TRANSMISSION LINES, etc.—B.A. 10/7—Columbia Power Co-operative, Inc., Monument, 117.3 mi. power transmission and distr. lines, Wheeler and Grant Counties. Plans deposit $10. Robert W. Welty, Box 282, The Dalles, engr.

Utah, Murray—B.A. 10/10—At office City Recorder, City Hall, sewage treatment plant; sewerage collection sys., incl. 117,850 cu. yds. excavation—main line; 17,820 cu. yd. excavation—service line; jacking corrugated metal pipe under the railroad 882 lin. ft. 10, 18, 21, 24, 30, 36 in. pipe; install 204,788 lin. ft. 4, 6, 8, 10, 12, 15, 18, 21, 27 in. sewer pipe; 513 manholes, 4,000 cu. yds. gravel backfill under sewer pipe, const. pumping plant. Plans deposit $25 each. Neff Engr. & Const. Co., 2500 Evergreen Ave., Salt Lake City, engrs. CD 9/15/52.

† **Idaho, Mountain Home**—IGLOOS—B.A. 10/21—U. S. Eng., City-County Airport, Walla Walla, Wash., concrete igloos, Mountain Air Force Base, Eng. 45-164-53-13, W. H. Mills, engr. CD 11/5/51.

† **Oregon**—B.A. 10/22—U. S. Eng., City-County Airport, Dam Reservoir and 46 mi. fences. Inv. 53-26. Plans Walla Walla, Wash., clearing 1,000 acres McNary deposit $50.

† **California**—TRANSFORMERS — B.A. 10/23 — Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars at shipping point or f.o.b. cars at Roseville, bush structures, current and potential transformers, generator-protective equip., grounding switches, disconnecting switches, for station-service taps, Folsom Power Plant, Folsom Unit, American River Div. Central Valley Proj., Spec. DS-3800.

BIDS ASKED—BUILDINGS

Calif., Los Angeles—HEADQUARTERS OFFICE—B.A. 10/8—State Div. of Architecture, State Bldg., 217 W. First St., headquarters office, alterations, addns., repairs, for Dpt. Motor Vehicles. Plans deposit $25. CD 3/18/43.

† **Calif., Twenty Nine Palms**—B.A. 10/8—Eleventh Naval Dist., P. Wks. Office, 1220 Pacific Hy., San Diego, theater, 2 post exchanges, infirmary, officers' mess, camp command bldg., supply bldg., necessary access roads, utilities for Marine Corps' Artillery Training Center, NOY 74048, Spec. 35083. CD 9/4.

Bids—Low Bids—Contracts—Third Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

† **Mass., Boston**—MAJOR REPAIRS—B.A. 10/15—U. S. Eng., 857 Commonwealth Ave., Boston, major repairs Boston Army Base, South Boston, $500,000.

† **N. H., Portsmouth**—LABORATORY—B.A. 10/21—P. Wks. Office First Naval Dist. 495 Summer St., Boston, Mass., electrical test laboratory bldg. at the Portsmouth Naval Shipyard, Spec. 30306. NOY 29522. Plans deposit $110.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Platt Constr. Co., Inc.**, 99 First St., Cambridge, Mass. LB. $1,872,000. No. A-1147, laboratory, Hanscomb Airport, BEDFORD, MASS. P. Wks. Office, 495 Summer St., Boston, Mass. and Raytheon Mfg. Co., Waltham, Mass. prime contr. Bids Sept. 16. CD 8/26.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **John A. Volpe Constr. Co.**, 54 Eastern Ave., Malden, Mass. CA. $1,802,496. Junior high SCHOOL, Cabot and Balch Sts., North Beverly, BEVERLY, MASS. City, School Bldg. Comn., Beverly, Mass. CD 9/3, under LB.

Brooklawn Constr. Co., 254 Prospect St., Hartford, Conn. CA. approx. $900,000. junior high SCHOOL, Unionville, FARMINGTON, CONN. Town, Town Hall, Farmington, Conn. Bids June 17. CD 6/5.

MIDDLE ATLANTIC

BIDS ASKED—BUILDINGS

▲ **N. Y., New City**—HIGH SCHOOL—B.A. 9/29—Clarkstown Central School Dist. No. 1, Court House, New City, Junior-Senior High School. $1,840,000.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Bowers Constr. Co., Box 1706, Raleigh, N. C. CA $668,425. concrete substructure bridge over Potomac River, 2,425 ft. 20 ft. span steel plate girder 2 abutments, 14 piers, 5 bents, piers 11 to 14 on steel H piles, Contr. F 507-3-715, Frederick Co. CD 9/2 under LB.

† **MARYLAND**—Bureau P. Rds., Dpt. Commerce, 1440 Columbia Pike, Arlington, Va.

T. E. Ritter Corp., 426 York St., Norfolk, Va. CA $747,022. c. conc. 3.929 mi. from Laurel-Fort Meade Rd. to Jessup Rd., Baltimore-Washington Parkway, Proj. 1G4-H3-13, Anne Arundel Co. Bids Aug. 28, awarded Sept. 9. CD 9/3 under LB.

† **Trueland Electric Co.**, 1715 Leighway St., Arlington, Va. LB $627,750. electric distr. sys., ring sys., manholes, substation, transformers stations, street lighting, U. S. Naval Engineering Experiment Station, Spec. 31661, ANNAPOLIS, MD. P. Wks. Officer, U. S. Naval Academy, Annapolis, Md. Bids Aug. 28. CD 8/12.

BUILDINGS

LOW BIDS AND CONTRACTS

Bronxville Knolls, c/o Gustave W. Iser, archt., 109 E. 29 St., New York 16, N. Y. Owner Builds. Approx. $800,000. garden APARTMENT for 89 families on 10½ acre tract off Cross County Parkway, BRONXVILLE, N. Y.

▲ **Jobil Constr. Corp.**, c/o Alwin Cassens, Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. $2,000,000. 216 HOUSES on tract on Old Country Rd., HICKSVILLE, N. Y.

▲ **Jade Homes**, c/o Stanley Klein, archt., 89-31, 161 St., Jamaica, N. Y. Owner Builds. Approx. $1,000,000. 105 HOUSES on 22-acre tract Broadway and Farm Lane., HICKSVILLE, N. Y.

† **Planet Constr. Corp.**, 11 W. 42 St., New York 36, N. Y. CA. $544,175, BARRACKS at Signal Corps Photo Center, LONG ISLAND CITY, N. Y. U. S. Eng., 80 Lafayette St., New York 13, N. Y. Bids Sept. 3. CD 7/11.

▲ **Diesel Constr. Co.**, 2 Park Ave., New York 16, N. Y. CA. Approx. $3,000,000. 15 story OFFICE, northeast corner of Fifth Ave. and 47 St., and 16 story office at Fifth Ave. southeast corner 48 St., NEW YORK, N. Y. Ivor B. Clark, 155 E. 44 St., New York 17, N. Y. Emery Roth & Sons, 18 E. 48 St., New York 17, N. Y., archts.

▲ **Suburban-at-Syosset Homes**, c/o Karl Bloch, archt., 7 Landsdown Ave., Merrick, N. Y. Owner Builds. $3,000,000. 250 HOUSES on 57-acre tract, South Oyster Bay Rd. and Northern State Parkway., SYOSSET, N. Y.

Syndicate c/o Henry H. Mager, archt., 250 Main St., White Plains, N. Y. Owner Builds. Approx. $500,000. garden type APARTMENT at 79 North Broadway through to Park View Court, WHITE PLAINS, N. Y.

▲ **Forest Park Apartments**, c/o Morris Kavy, archt., 44 Court St., Brooklyn 2, N. Y. Owner Builds. $8,000,000. APARTMENT project for 868 families nine 6-story bldgs., on 8 acre tract at Woodhaven Blvd., WOODHAVEN, N. Y.

▲ **Samuel Singer & Sons**, c/o Julius Fishkind, archt., 161-19 Jamaica Ave., Jamaica, N. Y. Owner Builds. $2,000,000. SHOPPING CENTER, housing project on 48-acre tract, Rtes. 28 and 202, SOMERVILLE, N. J.

▲ **Harben Constr. Co.**, c/o Erwin Gerber, archt., 1180 Raymond Blvd., Newark, N. J. Owner Builds. $1,500,000. 140 HOUSES on 56 acre tract on Union Ave., UNION, N. J.

▲ **Louis H. Cahan & Co. Inc.**, Market St. Natl. Bank Bldg., Phila., Pa., Separate Contracts. $1,000,000. River Park Towers APARTMENT bldg., TRENTON, N. J. CD 8/31/50.

† **Buck & Donohue, Inc.**, 790 Broad St., Newark, N. J. LB $502,000. WAREHOUSE and steam plant, Serial No. ENG 18-020-53-7. Indiantown Gap. Military Reservation. ANNVILLE, PA. U. S. Eng., 24 St. and Maryland Ave., Baltimore 3, Md. CD 8/15.

Westmoreland Constr. Co., Huff Ave., Greensburg, Pa. LB $602,900. est. $800,000. State Subsidized HOUSING Proj. 28, Overhall Manor, 60-families, Monessen, GREENSBURG, PA. Westmoreland Co. Housing Auth., 1st Natl. Bank, Greensburg, Pa. Sorber & Hoone, 1st Natl. Bank, Greensburg, Pa., archts. Bids Sept. 11. CD 8/28.

Dpt. Property & Supplies, 319 N. Front St., Harrisburg, Pa., rejected bids July 23, renovation of BUILDING No. 6 at Norristown State Hospital, LB $590,000. NORRISTOWN, PA. Will re-advertise. CD 7/28.

Navarro Corp., 6219 Broad St., Pittsburgh, Pa., CA Approx. $500,000. 1 story L-shaped, 42,000 sq. ft. brick, concrete SHOPPING CENTER, 22 stores, Pleasant Hills, PITTSBURGH, PA. Wm. Green, Cloverleaf Rte. 51, Pleasant Hills, Pittsburgh, Pa. Bids Sept. 5. CD 8/26.

▲† **F. Blake Constr. Co., Inc.**, 33 E. St. SW., Baltimore, Md. and **Wm. T. Lyons Co., Inc.**, 1700 Friendship St., Baltimore, Md. LB $1,546,000. Service and animal breeding bldgs., Eng 49-080-54-5-(5); utility bldg. and corral area, Eng 49-080-53-6-(6); boiler house addn., Eng 49-080-53-7-(7); crop development and storage shed, Eng. 49-080-53-19-(17); **Camp Detrick, Md.** U. S. Eng., First and Douglas St., N.W., Wash. 25, D. C. Bids Sept. 16. CD 8/15.

Charles H. Tompkins Co., 907 16 St. N. W., Wash., D. C. CA $600,000. cancer CLINIC and RESEARCH BLDG. at 23 St. and Washington Circle, WASH., D. C. George Washington University, 2029 G St. N. W., Wash., D. C. Faulkner, Kingsbury & Stenhouse, Ring Bldg., Wash., D. C., archts.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

▲ **Tenn., Memphis**—PARKING GARAGE—B.A. 12/15—City, city engr., City Hall, underground packing garage at Front and Monroe Sts. $1,200,000. CD 6/11/51.

BIDS ASKED—BUILDINGS

Va., Portsmouth—HIGH SCHOOL—B.A. 10/10—Norfolk Co. Bd. Educ., Portsmouth, high school. Approx. $500,000. Plans deposit $75. J. Binford Walford—O. Pendleton Wright 103 E. Cary St., Richmond, archts.

Fla., St. Petersburg—HOSPITAL—B.A. 10/15—City, city mgr., City Hall, Mound Park Hospital addns. Bids Aug. 15 rejected, LB $675,900. CD 9/3, under LB.

Tenn., Nashville—HIGH SCHOOL—B.A. After 10/15—Davidson Co. Bd. Educ., Court House, Junior High School unit at Issac High School. $600,000. CD 4/18.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Arundel Corp.**, Pier 2, Pratt St., Baltimore, Md., LB $654,528, maintenance dredging, Savannah Harbor. Inv. 53-7. GEORGIA. U. S. Eng., P. O. Box 889, Savannah, Ga.

▲† **Nello L. Teer Co.**, Trust Bldg., Durham, N. C., LB $1,066,000. Clearing reservoir Parcels 1 and 9, Jim Woodruff Dam, Inv. 53-5. Florida. U. S. Eng., P. O. Box 1169, Mobile 7, Ala. Bids Sept. 10. CD 8/13.

▲† **Dyson & Co.**, 806 W. Romana St., Pensacola, Fla. CA $1,583,000, supply warehouse, Nay 29322, PENSACOLA, FLA. Officer in Charge of Construction, U. S. Naval Air Station, Pensacola, Fla. CD 9/10, under LB

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Walter Kidde Constructors, Inc.**, 140 Cedar St., New York, N. Y. Design and construct. CA. Approx. $3,000,000. 1 story 360x780 ft. structural steel frame, masonry BUILDING, WINSTON-SALEM, N. C. Western Electric Co. Inc., Chatham Rd., Winston-Salem, N. C. CD 4/29.

Republic Cotton Mills, Great Falls, S. C. Owner Builds. Approx. $500,000. MILL bldg. No. 3 addn. GREAT FALLS, S. C.

▲ † **Bailey-Brazell Constr. Co. Inc.**, Stokes Bldg., Greenville, S. C. LB $1,132,557. FIRE STATION, motor transport shop and maintenance shop, Spec. 31172. NOY 70668, ALBANY, GA. P. Wks. Office, Box 365, Naval Base, Charleston, S. C. Bids Sept. 3.

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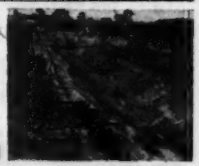

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Daniel Constr. Co., Box 2296, Greenville, S. C. LB $556,538, Murphey Junior HIGH SCHOOL, AUGUSTA, GA. Richmond Co. Bd. Educ., 422 7th St., Augusta, Ga. Bids Sept. 11. CD 8/29.
Yetter Homes, Inc., Olive Rd., Augusta, Ga. CA. $750,000, 73 RESIDENCES, AUGUSTA, GA. Glendale Corp., c/o contractor.
Kendrick Constr. Co., 322 Brown Ave., Columbus, Ga. Owner Builds. $500,000. 50 RESIDENCES, Pine Hill area. COLUMBUS, GA.
Strother-Barge Co., 167 Harris St., N. W. Atlanta, Ga., CA. $548,000. rehabilitation of BLDGS. and recreation bldg. WARM SPRINGS, GA. Georgia Warm Springs Foundation, Warm Springs, Ga. CD 8/26 under LB.
▲ **Leesburg Freezing Corp.**, Leesburg, Fla. Owner Builds. Approx. $2,000,000. 3 m. cu. ft. freezing PLANT and cold storage warehouse and office. LEESBURG, FLA. Awarded Sept. 11.
Pritchard & Seigle, c/o Robert Thomas Martin, archt., 23 N. Dunlap St., Memphis, Tenn. Owner Builds. Approx. $500,000. 30 RESIDENCES, MEMPHIS, TENN.
Chandler & Chandler, Porter Bldg., Memphis, Tenn. Owner Builds. $700,000. 92 RESIDENCES in Verosa subdivision, MEMPHIS, TENN.
† **Harmon Constr. Co.**, 100 S. Indiana St., Oklahoma City, Okla., CA $709,798, supply WAREHOUSE at the Memphis Naval Air Station, MEMPHIS, TENN. P. Wks. Office, Dpt. Navy, Naval Base, Charleston, S. C. CD 9/10, under Public Buildings.

MIDDLE WEST

BIDS ASKED—BUILDINGS

▲ **O., Warren** — HOSPITAL — B.A. 10/10 — Trumbull Memorial Hospital, John F. Latcham, Admin., 1350 E. Market St., hospital addn., $2,300,000. Keitch & O'Brien, Warren, and Kling & Frost, 661 Wick Ave., Youngstown, consult. archts. CD 9/27/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **ILLINOIS**—State Div. Hys., Centennial Bldg., Springfield,
Jansen & Schaefer, 1500 Broadway, Pekin, Ill., CA $565,643, concrete widen. and concrete base course, 13.55 mi., truck weigh station, Ill. 116, Tazewell and Woodford Counties;
S. M. H. Constr. Co., 1500 N. Adams St., Peoria 3, Ill. CA. $707,524, bit. resurf. concrete pavement and concrete widne 5.01 mi. Ill No. 29, Marshall and Peoria Counties;
Regenhardt Constr. Co., Harrison Bldg., Cape Girardeau, Mo., CA $742,779, bit, resurf., concrete base course, concrete widen. and culvert alterations 4.78 mi. Ill. No. 37, Jefferson and Franklin Counties. Grand total $2,015,946. Bids Sept. 9, Awarded Sept. 16. CD 9/15 LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Lutz Realty Constr. Co.**, 2537 Burton Ave., Indianapolis, Ind. Owner Builds. est. $7,000,000. 740 veterans' HOMES; $60,000 sewer in tract in northeast section, INDIANAPOLIS, IND.
Chapman Streets Corp., Emerson Ave. and Green Rock Lane, Indianapolis, Ind. Owner Builds. $700,000. 40 HOMES, INDIANAPOLIS, IND.
Farley Gresch Co., 5 W. South St., Indianapolis, Ind. Owner Builds. $500,000. 50 HOMES, Speedway City. INDIANAPOLIS, IND.
▲ **F. M. Knight**, 705 E. 61 St., Indianapolis, Ind. Owner Builds. $3,500,000. 200 HOMES in the Northridge Addn., INDIANAPOLIS, IND.
▲ **Turner Constr. Co.**, 100 W. Adams St., Chicago 3, Ill. CA. Approx. $2,000,000. two 12-story APARTMENT on Block 17 west of Cottage Grove Ave. and fronting on 35 St., CHICAGO, ILL. New York Life Insurance Co., 51 Madison Ave., New York 10, N. Y. Skidmore, Owngs & Merrill, 100 W. Monroe St., Chicago, Ill., archts.
▲ **S. N. Nielson Co.**, 3059 Augusta Blvd., Chicago 12, Ill., CA. $3,803,157, APARTMENT, 60th Langley Sts., CHICAGO, ILL. Chicago Dwellings Assoc., 69 W. Washington St., Chicago 2, Ill. Holabird & Root & Burgee, 180 N. Wabash St., Chicago 1, Ill. archts. Awarded Sept. 2.
J. Emil Anderson & Co., 1809 Balmoral Ave., Chicago 40, Ill., CA. $650,000. branch FACTORY at 2085 Hawthorne Ave., MELROSE, PARK, ILL. Standard Coil Products Co., 2329 N. Crawford Ave., Chicago, Ill. Travelletti & Suter 39 S. LaSalle St., Chicago 3, Ill., archts. Awarded Sept. 4.

WEST OF MISSISSIPPI

BIDS ASKED—BUILDINGS

▲ **Ia., Des Moines**—AUDITORIUM—B.A. 11/6—City, City Hall, veterans' memorial auditorium. $4,750,000. CD 4/4/50.

HEAVY CONSTRUCTION

LOW BID AND CONTRACTS

† **Cunningham-Kiewit Co.**, Bellevue St., Omaha, Neb. LB. $449,921. est. $366,885. pile dikes, revetments, repairs on 43 mi. Missouri River St. Joseph to Iata Bends, near St. Joseph, CIVENG 23-028-53-37, MISSOURI. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Sept. 9. CD 6/1/44.
SOUTH DAKOTA—State Hy. Comn., Pierre,
G. H. Lindekugel & Son, Mitchell, S. D. LB. $936,752, fillslope protection, 4.143 mi. WAR 165—Lyman and Brule Counties. Bids Sept. 9. CD 8/14.
▲ **SOUTH DAKOTA**—State Hy. Comn., Pierre,
J. H. Beckman Constr. Co., Sioux Falls, S. D. CA. $92,122, blade and cast in work 11.933 mi. S 427 (3), Tripp Co.;
Myrl Clark, Tyndall, S. D., CA. $162,624, base course, bit. surf. 9.731 mi. F 206 (11), Butte Co.;
H. F. Emme Constr. Co., Rapid City, S. D., CA. $268,196, grading, 12.121 mi. F 455 (7), Fall River Co.;
Dave Gustarson & Co., Inc., 502 E. 6 St., Sioux Falls, S. D. CA. $342,221, grading and service gravel 12.601 mi. FI 185 (32), Lyman Co.;
J. L. Healy Constr. Co., 301 Western Surety Bldg., Sioux Falls, S. D., CA. $68,736, base course imprv. material 3.545 mi. S 557 (1), McCook Co.;
Harris Constr. Co., Faulkton, S. D. CA. $65,395, grading, 4.143 mi. WAR 165, Lyman and Brule Counties;
Pasco Constr. Co., Sioux Falls, S. D., CA. $258,672, grading, service gravel 13.105 mi. F 191 (17), Clark and Kingsburg Counties;
Platte Valley Constr. Co., Grand Island, Neb., CA. $287,559, grading 13.427 mi. F 455 (9), Shannon Co. Grand total $1,545,525. Bids Sept. 9. CD 8/28.
▲† **George Bennett Constr. Co.**, 1520 Central St., Kansas City, Kan. LB $2,234,604. est. $2,921,599. Tuttle Creek Dam across Blue River near Manhattan, Partial excav. of spillway, portion of outlet works conduit, constr. bridge, initial fill, KANSAS. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Sept. 16. CD 8/21.
▲† **Guy H. James Constr. Co.**, First National Bldg., Oklahoma City, Okla. and **Wunderlich Contg. Co.**, 206 Patterson Bldg., Omaha, Neb. CA. $12,838,691. Tiber Dam and reservoir on lower Marias River, Toole and Liberty Counties, near Chester, MONTANA. Bureau Reclamation, Dpt. Interior, Civic Center Bldg., Great Falls, Mont. CD 8/15, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

James R. Leverett, Savings & Loan Bldg., Des Moines, Ia. Owner Builds. est. $900,000. 90 DWELLINGS, DES MOINES, IA.
▲ **Ebasco Services, Inc.**, 2 Rector St., New York, N. Y. CA, design and construct, Hawthorne STATION ADDN.;
Westinghouse Electric Corp., Union Bank Bldg., Pittsburgh Pa. CA. 100,000 kw turbo generators. Total est. $15,200,000 KANSAS CITY, MO. Kansas City Power & Light Co., 1330 Baltimore St., Kansas City 10, Mo.
▲† **Utah Constr. Co. and C. H. Levell**, 4524 Alamorgordo St., El Paso - Tex. LB. Item 1 $4,121,944, Item 2 $3,554,644, smokeless powder magazine project at U. S. Naval Ammunition Depot, Spec. 34,-747, SHUMAKER, ARK. Eighth Naval Dist., Naval Station, New Orleans, La. Bids Sept. 11. CD 8/2.
Manhattan Constr. Co., 2828 Pease St., Houston, Tex., CA. Approx. $769,000. 5-story OFFICE, HOUSTON, TEX. John I. Hill & Assoc., M & M Bldg., Houston, Tex CD 9/12.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

Wash., Toppenish—B.A. 10/14—City, City Hall, under drainage, sanitary sewers, trunk and lateral sewers in $800,000 project. Gray & Osborne, Larson Bldg., Yakima, engrs. CD 7/8.
▲ **Utah, Salt Lake City**—B.A. 10/20—Salt Lake County Conservancy Dist., City and County Bldg., sanitary sewerage sys. throughout the District. $6,000,000. Caldwell, Richards & Sorensen, Zions Savings Bank Bldg., engrs. CD 3/26/48 under LB.

BIDS ASKED—BUILDINGS

▲ **Calif., San Francisco**—SCHOOL—B.A. 10/15—City and County of San Francisco, Dpt. P. Wks., City Hall, A. P. Giannini Junior High School, 37 and 39 Aves., general contract No. 1050, $2,250,000; plumbing and mechanical contracts. No. 1050A, $525,000; electric contract No. 1050B $175,000. Plans deposit No. 1050 $100, No. 1050A $50, No. 1050B $25. Harry A. Thomsen Jr. and Aleck L. Wilson, 315 Montgomery St., archts. CD 10/6/44.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Peter Kiewit Sons Co.**, 1024 Omaha National Bank Bldg., Omaha, Neb. and **Morrison-Knudsen Co.**, 319 Broadway, Boise, Idaho. CA $550,346. access road to prototype aircraft propulsion reactor area at national reactor testing station, ARCO, IDAHO. Atomic Energy Comm., Idaho Operations Office, Idaho Falls, Idaho. CD 9/18 under LB.
▲ **WASHINGTON**—State Hy. Dpt., Olympia,
Morrison-Knudsen Co. Inc., 314 Broadway, Boise, Ida. LB $2,384,061. est. $2,000,000. vehicular subway on Battery St. to connect Aurora Ave. with Alaska Way Viaduct, King Co. Bids Sept. 16. CD 9/10.
† **Todd Shipyards Co.**, Industrial Road, Houston, Tex., LB. $574,974, intake gates for Chief Joseph Dam, Inv. 53-2, Bridgeport, WASHINGTON, U. S. Eng., 4735 E. Marginal Way, Seattle, 4, Wash. Bids Sept. 4.
▲ **CALIFORNIA**—State Div. Hys., 120 S. Spring St., Los Angeles,
J. E. Haddock, 3528 E. Foothill Blvd., Pasadena, Calif. LB $1,919,792. grading paving 1.1 mi. 19 retaining walls, etc. on Harbor Freeway between Olympic Blvd. and Second St., Los Angeles Co. Bids Sept. 11. CD 8/19.
† **Ford J. Twaits Co., Morrison-Knudsen Co.**, and **Macco Corp.**, 449 S. Beaudry St., Los Angeles, Calif. LB $965,621. 2 story missile project bldg., Spec. 36420, POINT MUGU, CALIF. Dpt. Navy, Naval Air Missile Test Center, Point Mugu, Calif. Bids Sept. 11. CD 8/27.

† **Edward R. Siple Co.,** 2545 San Fernando Rd., Los Angeles, Calif. LB $611,949. addnl. aviation fuel storage at Naval Auxiliary Air Station, NOY 27059, Spec. 29059, EL CENTRO, CALIF. Eleventh Naval Dist., San Diego, Calif. Bids Sept. 9. CD 8/11.

▲ † **P. J. Walker Co.,** 3900 Whiteside Ave., Los Angeles, Calif. CA $1,594,951. barracks for Marine Corps Air Station, NOY 71128, Spec. 32682, EL TORO, CALIF. Eleventh Naval Dist., San Diego, Calif. Bids July 13, awarded Sept. 11. CD 7/22 under LB.

† **Stanley Ball,** 1101 Westminster Ave., Alhambra, Calif. CA $583,443. aircraft parking areas, First increment at Naval Air Station, NOY 72616, Spec. 33806, MIRAMAR, CALIF. Dpt. Navy, San Diego, Calif. CD 7/25 under LB.

▲† **Wm. P. Neil Co. Ltd.,** 4814 Loma Vista St., Los Angeles, Calif. CA $1,080,978. est. $1,000,000. rein.-con. public works bldg., metal trades bldg., El Toro Marine Corp Air Station, NOY 71129, Spec. 32683, SANTA ANA, CALIF. Dpt. Navy, San Diego, Calif. Bids July 30, awarded Sept. 8. CD 8/13 under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

A. Balch, 8050 35 Ave., N. E. Seattle, Wash., Day Labor. $850,000. 100 HOUSES, Highlands Addn. RENTON, WASH. CD 5/29.

▲ **Westinghouse Electric Corp.,** 401 Liberty Ave., Box 2278, Pittsburgh 30, Pa., CA $1,195,000, for sixteen 6,000 kva unit SUBSTATIONS, SEATTLE, WASH. City, Dpt. of Lighting, County-City Bldg., Seattle, Wash. CD 7/8.

Lovell Homes, Inc., 12510 15 Ave., N. E., Seattle, Wash., Day Labor. Approx. $540,000. 45 HOUSES on 15 Pl. N. E. and 15 and 17 Aves., N.E., E. 135 to 137 Sts., SEATTLE, WASH.

Ross B. Hammond Co., Box 3901, Portland, Ore., LB $757,392, 4-story rein.-con. HOSPITAL wing, SALEM, ORE. Salem General Hospital, Salem. Bids Aug. 27. CD 8/12.

▲ † **Louis C. Dunn & Carrico & Gautier,** 799 Monadnock Bldg., San Diego, Calif. CA $3,240,132. WAREHOUSES Nos. W-11, W-12, hardstand pavement, arenas Nos. 59 and 60 at Benicia Arsenal, Eng. 04-203-53-108, BENICIA, CALIF. Bids Sept. 4, awarded Sept. 11. CD 9/11 under LB.

▲ **Williams & Burrows and Carl N. Swenson,** 10 California St., Burlingame, Calif. LB $1,987,000. general contract;

W. L. Hickey Sons, Inc., 901 El Camino Real, Lomita Park, Calif. LB $540,000. mechanical contract, 6 WARD BLDGS. and COMM. BLDG. at Sonoma State Home, ELDRIDGE, CALIF. State, Div. Architecture, P. Wks. Bldg., Sacramento, Calif. Bids Sept. 11. CD 8/5.

M. J. Brock & Son, 2894 Rowena Ave., Los Angeles, Calif. LA est. $455,964. 56 frame, stucco DWELLINGS in tract 17568, LONG BEACH, CALIF. Bel Estate Fourth Inc., and M. J. Brock & Son, 4439 Atlantic Ave., Long Beach, Calif., Poper & Lockett, F & M Bldg., Long Beach, Calif., archts.

Robert E. McKee, 4700 San Fernando Rd., Los Angeles, Calif. LB. $462,700. cancer RESEARCH BLDG. addn. to medical center, LOS ANGELES, CALIF. University of California, 405 Hilgard Ave., Los Angeles, Calif. Bids Sept. 9. CD 8/26.

L. C. Anderson, 3040 Hancock St., San Diego, Calif. LB. $419,700. est. $300,000. 37,000 sq. ft. frame stucco Will Angier Elementary SCHOOL, Kearny Mesa, SAN DIEGO, CALIF. San Diego Unified School Dist., 825 Union St., San Diego, Calif. Bids Sept. 9. CD 8/28.

▲ **Medco Corp.,** c/o owner. CA. est. $1,500,000. 200 frame, stucco DWELLINGS, West Ave. and Mirabate Dr., SAN PEDRO, CALIF. Willens & Bertisch Co. and Harry Medrick, 6715 Melrose Ave., Los Angeles, Calif.

Wm. Simpson Constr. Co., 816 W. 5 St., Los Angeles, Calif. CA. $550,000, 28,800 sq. ft. rein.-con. LABORATORY, VAN NUYS, CALIF. Carnation Co., 5045 Wilshire Blvd., Los Angeles, Calif. S. B. Barnes, 2234 Beverly Blvd., Los Angeles, Calif., engrs.

▲ **Gilbert Investment Co.,** 315 S. LaCienega St., Los Angeles, Calif. Owner Builds. est. $1,628,000. 148 stucco, frame DWELLINGS in tract 15895, WEST COVINA, CALIF. Southwest Drafting Service, 2724 W. Florence Ave., Los Angeles, Calif., engrs.

ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Valle-Sommers Constr. Co.,** 407 3 Ave. W., Seattle, Wash., CA. $10,014,371. 8 family quarters bldg. Inv. 53-9. Elmendorf Air Force Base. ALASKA. U. S. Eng., Anchorage, Alaska. Bids Aug. 29. CD 9/3, under LB.

† **Morrison-Knudsen Co. Inc.,** 314 Broadway, Boise, Idaho, CA. $935,033, water distr. sys. in Airport Heights and Eastchester areas. Proj. 50-A-157 and 50-A-120, ANCHORAGE, ALASKA. Alaska P. Wks., dpt. Interior, Juneau, Alaska. Bids Aug. 6. CD 8/12, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **J. B. Warrack Constr. Co.,** 400 2 Ave., W. Seattle, Wash., CA. $1,690,000. rein.-con. HIGH SCHOOL, ANCHORAGE, ALASKA. School Dist., Anchorage, Alaska. Bids Sept. 5. CD 9/12, under LB.

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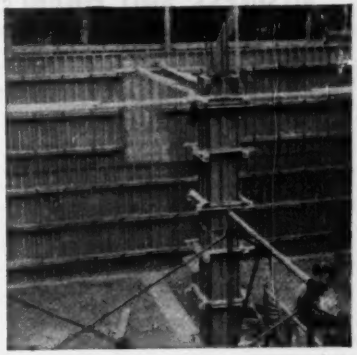

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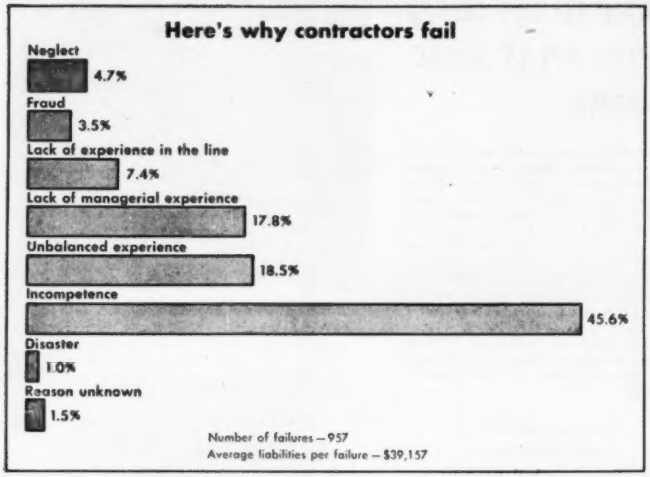


Dun & Bradstreet study shows why contractors go bankrupt

Why do contractors fail?

Last week, Dun & Bradstreet offered some possible answers.

The nationally known credit rating firm analyzed the failures in 1951 of 346 general contractors, 577 subcontractors and 34 other contractors.

Three major reasons for contractors' failures emerged from the analysis. Dun & Bradstreet said 45.6% of the failures were due to "incompetence." Another 18.5% had unbalanced experience, and 17.8% of the failures were traced to lack of managerial experience.

A fourth reason, which accounted for 7.4% of the failures in the construction industry last year, was a lack of experience in the line.

Together, these four business handicaps accounted for almost 90% of the failures in the construction industry last year.

Dun & Bradstreet's breakdown showed that almost 27 out of every 100 contractors who failed did so because they couldn't get enough contracts. Twenty out of every 100 who failed were victims of heavy operating expenses. The same percentage showed competitive weakness. And 16 out of every 100 who failed did so because they had trouble collecting money for the work they performed.

A comparatively small percentage (4.7%) of the construction failures were due to neglect of the business. An even smaller percentage (3.5%) was traced to fraud. Only 1% of the contractors who failed last year were victims of some disaster, such as fire, flood, or of burglary, employees' fraud or strike.

No contractors failed because of labor or materials shortages, according to the Dun & Bradstreet study.

• **Experience pays**—Dun & Bradstreet turned up another pointed fact—almost 59 out of every 100 contractors who failed last year had been in business five years or less. The longer a construction firm stays in business, the less likely it is to go bankrupt, the analysis showed.

Out of those who failed last year, the study revealed that 1.5% had started in business in 1951—and went out of business the same year. Another 14.4% had been in business two years; 16.8%, three years; 13%, four years; and 12.7%, five years.

A higher number of general contractors went bankrupt last year than in 1950, and the loss to their creditors was far higher.

In 1950, Dun & Bradstreet reported the failure of 282 general contractors, with liabilities of $9.2 million. Last year, the number went up to 346 general contractors, with liabilities of $19.8 million.

However, fewer subcontractors failed last year. The study showed 577 subcontractors as failures in 1951, compared with 588 in 1950. And the liabilities were lower last year—$13.6 million, compared with $14.4 million in 1950.

Thirty-four other contractors, presumably specialized, failed in 1951, compared with 42 in 1950. Last year's failures piled up a higher total of liabilities, however—$4 million as compared to $2 million.

Dun & Bradstreet's reference book includes manufacturers, wholesalers, retailers, building contractors, and certain types of commercial service including public utilities, water carriers, motor carriers, and airlines. It does not list financial enterprises, including banks and mortgage, loan and investment companies; insurance and real estate companies; railroads; terminals; amusements; and many small one-man services. Neither the professions nor farmers are included.

Dun & Bradstreet's reference book last year listed 2,608,000 firms, of which 8,058 failed. The construction industry accounted for 11.9% of the failures.

NPA cuts steel quota for CMP violation

The National Production Authority has reduced the quarterly steel allotment of Wooldridge Manufacturing Co., Sunnyvale, Calif., by 452 tons over the next three quarters for admitted unauthorized disposition of steel.

NPA hearing commissioner William B. Owens, who presided at the San Francisco hearing on the charges, said he found no willful violation of NPA regulations by the construction equipment manufacturer, who, Mr. Owens said, simply acted to "recapture for the defense program an amount of steel equal to the diverted 452 tons."

James Gusman, Wooldridge president, explained that his company had become oversupplied with the wrong type of steel when production schedules had been changed and suppliers refused to cancel orders.

Fearing that they would violate NPA regulations, the Wooldridge company disposed of the tonnage to an authorized jobber, Gusman said. This act also violated NPA rulings, which were in effect at that time.

Contractor denies responsibility in bridge collapse damage suit

Harvey H. Stewart, a Charlotte, N. C., contractor, in answer to damage suits, denied last week that his company was responsible for collapse of a temporary bridge over the Roanoke River, near Scotland Neck, N. C., May 17, 1951. A truck driver lost his life in the accident.

As a result of this, Stewart, an engineer-inspector of the contracting company, and an inspector of the North Carolina Highway Commission were indicted on manslaughter charges (ENR Apr. 17, p. 27).

Denying allegations in the complaint that the bridge collapse was due to use of inferior materials and to faulty workmanship, Stewart said last week that the collapse was due to the truck accident which occurred.

Stewart said the incident occurred this way: A trailer truck collided with another truck on the bridge, and as a result, swerved suddenly to the right and hit a bridge guard rail with such force as to pull loose three steel beams. At this point, the bridge collapsed and the trailer truck plunged into the river, Stewart said.

• **Contractor blames driver**—Stewart contended the truck was responsible for collapse of the bridge because it was carrying a load in excess of that allowed by state law and was traveling at an excessive rate of speed.

The accident occurred three days after the bridge was officially opened by the North Carolina State Highway Commission, Stewart said. Because of this, he could be held responsible for control of traffic over the bridge, Stewart contends.

Two damage suits were filed in Halifax County Superior Court last May by James A. Liverman, administrator of the estate of the truck driver who was killed, and by the Hampton Truck Lines of Norfolk, owner of the truck.

The former seeks damages totaling $50,000 and the latter is seeking damages of $11,122 for loss of the truck and its cargo.

Damage suits were filed shortly after a Northampton County grand jury last April indicted Stewart, W. S. Murphy, inspector-engineer for the contractor, and J. M. Claghorn, inspector for the North Carolina State Highway Commission, on manslaughter charges.

The grand jury indicted the three men after studying a report signed by John H. Barking as principal certified professional engineer in charge of an investigation conducted by Solicitor Ernest R. Tyler. Barking cited a number of violations of safe construction practices.

Ohio licensing board resigns in protest

All five members of the Springfield, Ohio, contractors' licensing board have resigned in protest.

The action followed a dispute over errors in a heating plant installation in a home built by L. Edwin Hoppes, Springfield contractor.

The board recommended revocation of Hoppes' general unlimited contractors' license. City Manager R. M. Hoisington overruled the board. He said the hearing disclosed that the error in the heating installation was not reported by the owner until 18 months after it was discovered. He added that Don Hoppes, brother of the contractor and installer of the system, is no longer employed by Hoppes; and that the contractor attempted to correct the mistake after it was discovered. Since 1948, Hoppes has constructed scores of homes in which heating installations are satisfactory, the city manager said.

The contractors' board recommended action against Hoppes, saying the faulty heating unit in question caused a woman's death by asphyxiation in 1950.

Hoppes is currently building a 112-unit development northwest of Springfield.

Construction in place up 2% in August

Construction put in place in August rose 2% above July to a new monthly record of $3.2 billion, according to preliminary estimates by the Bureau of Labor Statistics and the Building Materials Division of the Department of Commerce.

Studies of contract employment and public construction operations indicated no measurable effect of the steel strike on construction during August, the two agencies reported.

Most types of private and public construction made seasonal advances in August. Private industrial building, however, continued its slow but steady decline. Its total for August was $178 million as against $180 million in July and $209 in February.

Private new construction accounted for $2 billion of the August expenditures; public construction was responsible for $1.1 billion. Homebuilding represented 46% of the private total. In the public sector, 30% went into military, naval and Atomic Energy Commission facilities and another 30% into highways.

For the first eight months of 1952, total dollar outlays are 5% greater than in the same period last year. A 22% gain in public construction accounts for the rise.

Most of the increase in public construction came from military and AEC expenditures, which more than doubled last year's eight-month figure.

Private construction for the eight months lagged 2% behind the 1952 dollar figure. Homebuilding is close to catching up with last year's outlays, but commercial building this year has run nearly one-third lower than in the January-August period of 1951.

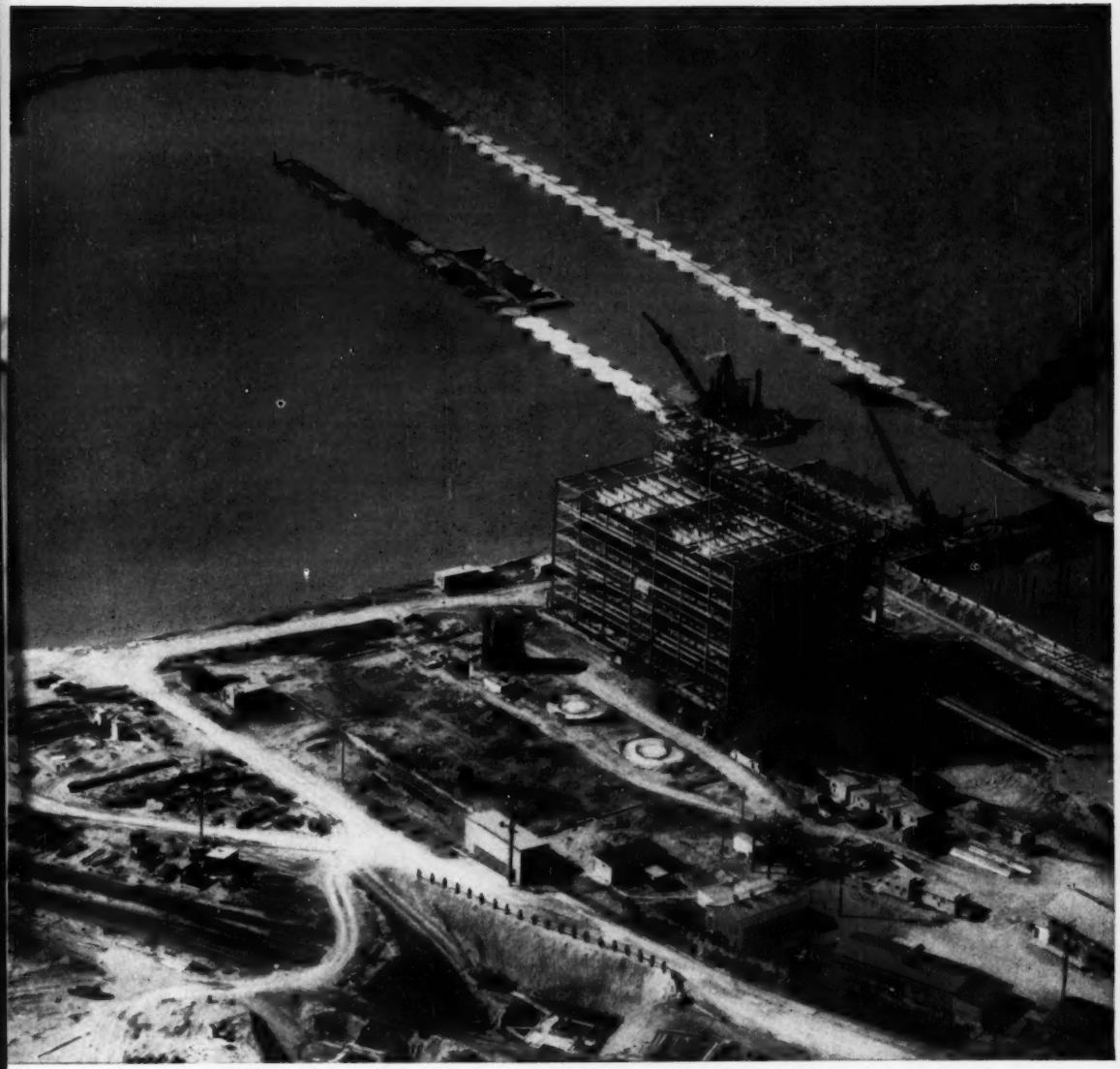
Business briefs . . .

• **New stockholder**—Westinghouse Air Brake Co., of Wilmerding, Pa., has purchased a majority interest in the Le Roi Co., which manufactures engines, portable compressors and rock drills.

• **Turnpike financing**—The Pennsylvania Turnpike Commission announced the sale of $65 million in revenue bonds to finance a 33-mile link from King of Prussia to U. S. Route 13, north of Bristol, less than a mile from the Delaware River.

• **Funds for schools**—The Federal Security Agency allotted another $3.8 million for 26 school construction projects in the states of California, Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Missouri, Nebraska, New Jersey, New York, Ohio, Washington.

• **Promotional campaign**—The New Jersey State Highway Authority last week said it will spend $130,000 in a promotional campaign to persuade voters to agree to a proposal that would put the state's faith and credit behind a $250-million revenue bond issue, which would finance completion of the 180-mile Garden State Parkway as a toll facility. If the referendum proposal is approved, the state will save $80 million in interest charges, and construction will be speeded.



CONSTRUCTION IS UNDER WAY on Cleveland Electric Illuminating Co.'s Eastlake power plant which will represent investment

Industrial building boom helps construction

Private industry has found fertile ground in the Cleveland and northeastern Ohio area where industrial building since World War II is booming to the tune of $1.5 billion.

This impressive amount of construction money invested in the area's future is all from private sources, according to the Cleveland Electric Illuminating Co. CEI has been called "Northeastern Ohio's number one salesman."

In the 1,700 sq mi area serviced by the CEI, this is how far the boom has traveled in the post-war period:

of 100 million, have 1,000,000-kw capacity.

cash flow to Ohio

$1.5 billion has been spent or committed (i.e., definite plans have been made for a new plant in the area). By "definite," CEI means that land has been purchased for a site, plans are known, the approximate number of employees is known, and CEI has a clear idea of the electric power requirements.

• **Who is expanding?**—Leading is the transportation equipment industry (automotive, aircraft, rails and boats) with an estimated expenditure of $578 million, accounting for 37.6% of the total.

Others include primary metals, $374 million, 24.3% of the total; chemicals, $235 million, 15.3% of the total; electrical machinery, $102 million, 6.5% of the total; fabricated metals, $66 million, 4.3%; machinery, $64 million, 4.2%; and other manufactures, food and kindred products, $118 million, 7.8%.

The vast expansion in the transportation equipment field is traced to a heavy demand and ready market for its products in the post-war period.

A 1,600,000 sq ft giant, Chevrolet-Cleveland plant, has been built by the General Motors Corp. to make the Powerglide automatic transmission. Two Fisher Body Co. divisions, one on Coit Rd., the other on Euclid Ave. were modernized and retooled for increased output.

Ford Motor Co. purchased 200 acres in Brook Park, a west side Cleveland suburb, for a foundry and engine plant, each of about 1,000,000 sq ft, involving an expenditure of $80 million. These are nearing completion.

Thompson Products, Inc., manufacturer of automotive and aircraft parts, is another leader in the transportation field. It recently purchased and is modernizing the 435,000 sq ft Lincoln Electric Co. plant. Thompson Products has also invested heavily in its Tapco Division in suburban Euclid and on its main plant in Cleveland at Clarkwood Rd. Additions have been made on a regular basis since World War II, especially at Tapco.

• **Major steel expansion**—In primary metals, the leader of the northeastern Ohio industrial expansion boom is steel. Nearly 10% of American strip, sheet and plate steel comes from Cleveland. Approximately 8% of the wire drawing is done in Cleveland. Steel is now in the midst of expanding local productive capacity by about 50%.

Republic Steel fired up its new No. 6 blast furnace—capacity 1,470 tons a day—on Apr. 16. A new 1,300 ton capacity blast furnace is being completed at Jones & Laughlin Steel Co.

Republic is expanding capacity by 627,000 tons and Jones & Laughlin expects to bring its production up to 360,000 tons. American Steel & Wire Co. is also stepping up its expansion.

The non-ferrous metal field has kept pace. Aluminum Company of America has modernized and grown. Chase Brass & Copper Co., Inc., has doubled its World War II facilities.

A big growth is now going on in the chemical industry. Well-known names in this field that have participated in post-war growth are Diamond Alkali Co., Electro Metallurgical and Linde Air Products Divisions of the Union Carbide & Carbon Corp.; B. F. Goodrich Chemical Corp.; Harshaw Chemical Co.; Hooker-Detrex, Inc.; Industrial Rayon Corp.; Naugatuck Chemical Division of the United States Rubber Co.; and National Distillers Chemical Corp.

Leading the field in electrical machinery are the Lincoln Electric Co. and the Reliance Electric & Engineering Co. Lincoln opened an $8.5-million installation in Euclid in June. In May, Reliance held open house at its new $1.8-million plant, also in Euclid.

General Electric Co., the Electro-Motive Division of the General Motors Corp., and the Electric Controller & Manufacturing Co. have made investments totaling millions of dollars.

The Cleveland Electric Illuminating Co. takes pride in the industrial expansion boom that has taken place since 1945. It feels that about one-third of the total expansion represents "outside" industry brought into the area. CEI is responsible for a good share of the boom because of the number of these "outside" firms that it has encouraged to come to Cleveland and northern Ohio.

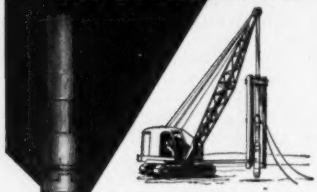
• **Selling job**—Through an advertising budget of $150,000 annually, CEI sells Cleveland as the "Best Location in the Nation."

CEI salesmen energetically canvass prospects for new industrial plants in Cleveland and northeastern Ohio. An example of this is the selling job which persuaded Ford Motor Co. to build its $80-million plant in the area. CEI sold the state of Ohio on building a $100,000 road near the proposed site. This road played an important role in bringing the plant to Cleveland.

In addition to Ford, another example of a major company brought into the area is the multi-million dollar Fruehauf Trailer Co. plant.

In selling its location, CEI cites the abundant fresh water supply of Lake Erie, availability of materials, transportation facilities, low tax rate, choice sites for plants and "first class power service at low rates."

INVESTIGATE
Vibroflotation



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V-1 RUST

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Maximum Joint Filling
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CORK

- Recovers 50% Beyond Original Thickness After Compression
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Ideal for large concrete structures or masses where substantial initial contraction is anticipated before any considerable amount of expansion takes place. 50% expansion beyond original thickness after compression keeps joint space filled, regardless of concrete movement. Made in ⅛" to 1" thicknesses; 2" to 12" (Standard) widths; also made in 24" and 36" widths on special order.

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UNIT PRICES

Runway paving, Oklahoma

Municipal airport improvements for Ponca City, Oklahoma brought close bidding. Six of the nine bids were within 10% of the low bid; the second two bids being only 5% higher than the low bid.

The project was divided into a base bid and four alternates. The base bid includes overlaying an existing runway with 8-in. concrete pavement, a new concrete runway, 4,800x100-ft with asphalt shoulders; access road, consisting of draining, grading, and surfacing; underground electrical ducts and concrete pull boxes. Alternate 1 provides for overlaying a taxiway and also shoulder fill. Alternate 3 consists of constructing a parking area; and alternate 4, fencing. Alternate 2, constructing concrete pipe and inlets, was not awarded.

The job is 1½ mi from a railhead; rock will be hauled by truck 28 mi, and sand, 7 mi.

C. H. Guernsey and Co., of Oklahoma City, are the consultants on the project.

Hourly wage rates to be paid for skilled labor range from $2.15 to $2.40; semi-skilled, $1.60 to $1.90; and common, $1.45.

Work began August 4th and must be complete in 80 working days. Bidders include:

1C Lyles-Buckner Inc., Muskogee, Okla.	327,782
2 Boecking Const. Co. Inc., Oklahoma City	343,858
9 Amis Constr. Co., Oklahoma City	445,321

Bids: 7-15-52 Items	Unit	Quantity	Unit prices 1 C	2
Base bid				
Exc, unclassified	cy	3,644	$0.90	$0.45
Borrow	cy	22,778	0.55	0.50
P C conc pavement, 8"	sy	51,622	3.47	3.63
9"	sy	12,656	3.82	3.91
Leveling up conc	cy	680	12.00	15.00
Sub-base for conc pave, 7"	cy	3,375	1.00	2.00
10"	cy	2,139	1.00	2.00
Granular sub-base, 3½" to 4½" for shldrs on ext	cy	780	1.00	2.00
5½" for access road	cy	374	1.00	2.00
Crushed rock, 4" for shldrs on ext & access road	cy	1,075	5.00	5.25
Crushed rock base for shldr	cy	2,895	5.00	5.25
Prime material	gal	10,718	0.15	0.14
Emulsified asphalt	gal	28,583	0.15	0.16
Agg for double bit surf, ½	t	625	5.00	5.55
½	t	447	6.00	5.55
Concrete pipe, 18"	lf	846	5.00	4.00
inlet C	ea	1	250.00	250.00
inlet D	ea	1	250.00	250.00
Inlet F, grate	ea	1	200.00	250.00
Conc curb & gutter	lf	185	2.50	1.75
Remove conc curb & gutter	lf	183	0.25	0.50
Solid & Strip sodding	sy	26	1.50	1.00
Seg circle & traffic pattern ind	ls	1	400.00	600.00
Undergrnd elect duct, encased in conc, 2-way 3"	lf	320	5.00	2.50
4-way 3"	lf	156	7.00	2.63
4-way 4"	lf	56	8.00	3.00
Conc pull boxes	ea	2	50.00	75.00
Flush marker lights raise only	ea	3	50.30	25.00
Alternate 1				
PC conc pavement 8"	sy	6,964	3.40	3.65
Leveling up conc	cy	95	12.00	15.00
Alternate 3				
Exc, unclassified	cy	299	0.90	0.45
Granular sub-base, 5½"	cy	265	1.00	2.00
Cr rock base, 4"	cy	193	5.00	5.25
Prime material, gal	gal	520	0.15	0.16
Emulsified asphalt	gal	1,386	0.15	0.18

Bids: 7-15-52 Items	Unit	Quantity	Unit prices 1 C	2
Aggr, ½ dbl bit surf	t	30	5.00	5.55
½	t	22	6.00	5.55
Conc curb and gutter	lf	600	2.50	1.75
Stnd str conc pipe, 12"	lf	12	4.25	2.75
Inlet E, curb inlet	ea	1	200.00	250.00
Alternate 4				
New chain link fence	lf	224	2.00	1.85
Remove chain link fence	lf	515	0.25	0.16
Place salv chain link fence, cut to 4' high	lf	175	0.70	0.52
New barbed wire fence	lf	320	1.00	0.54
Remove barbed wire fence	lf	2,025	0.25	0.23
Place salv barb wire fence	lf	838	0.12	0.16
	lf	838	0.12	0.17

Canal work, Texas

The low bid received by the Department of Utilities, City of Houston, for San Jacinto River Project, a $3.2-million canal improvement, was for cast-in-place concrete lining and monolithic concrete siphons. Shotcrete lining and reinforced precast concrete pipe siphon were offered as an alternate. Unit prices are shown here for both. The lump sum prices for removing old structures totaled $17,150. Maintenance of water supply during construction will cost $472,500.

Lockwood and Andrews, of Houston, are the consultants. Bidders include:

1C Brown & Root Inc., Houston, Tex.	$3,222,601
2 F & C Engineering Co, Houston	3,422,365

Bids: 7-23-52 Items	Unit	Quantity	Unit prices 1 C	2
Clearing & grubbing	ac	4.7	500.00	450.00
Common exc	cy	294,200	1.40	0.85
Earthwork in canal	stay	461	675.00	125.00
Channel excavation	cy	4,370	0.85	0.45
Conc, cls A, struct	cy	1,328	85.00	52.00
Reinf stl, struct	lb	165,500	0.15	0.13
Exp jts for lining	lf	25,400	2.80	2.60
Dbl 66" ID stl pipe subaqueous crossing	lf	178	425.00	260.00
Dbl 72" ID stl pipe subaqueous crossing	lf	121	445.00	350.00
Reinf conc pipe, 18"	lf	104	6.30	3.50
24"	lf	112	6.75	6.25
30"	lf	416	10.50	8.50
36"	lf	104	12.50	11.50
Rect all stl contr gate 48"x54"	ea	3	335.00	350.00
60"x96"	ea	6	520.00	570.00
66"x72"	ea	4	560.00	570.00
72"x78"	ea	2	630.00	625.00
Motorgate, 48"	ea	1	1,100.00	510.00
Broadcast sprig sodding	sy	250,000	0.11	0.04
Flexible base type access & patrol road	stay	522	190.00	130.00
Bndry fencing, 4 strand barbed wire	lf	124,208	0.40	0.32
Chain link type fencing	lf	10,185	3.75	4.00
Rem & rep conc pavement	sy	307	8.40	8.00
asph pavement	sy	144	4.20	3.50
shell pavement	sy	263	2.80	2.00
reinf conc pipe, 48"	lf	62	31.00	25.00
Rem & salv CI pipe, 48"	lf	312	35.00	4.50
Temp timber trestle	ls	1	$5,000	$12,000
Reinf shotcrete canal lin 2" thick	sf	2,247,653	$0.44	$1.00
Reinf shotcrete revetment lin Sheldon res, 2" thk	sf	153,365	0.48	1.00
Reinf shotcrete spillway dr ditch lin 1½" thk	sf	19,365	0.45	0.95
Reinf precast conc pipe siphon, dbl 60" dia	lf	320	105.00	65.00
in tunnel	lf	82	190.00	335.00
dbl 66" dia	lf	1,640	110.00	70.00
in tunnel	lf	139	375.00	340.00
dbl 72" dia	lf	943	125.00	100.00
Alternate				
Reinf CIP conc canal lining 4" thick	sf	2,247,653	0.42	0.95
Reinf CIP conc revetment lin Sheldon Res, 4"	sf	153,365	0.45	0.95
Reinf CIP conc spillway dr ditch lining 2"	sf	19,365	0.43	0.90
Reinf mono conc siphon dbl 60" dia	lf	320	105.00	65.00
in tunnel	lf	82	190.00	335.00
dbl 66" dia	lf	1,640	110.00	70.00
in tunnel	lf	139	375.00	340.00
dbl 72" dia	lf	943	125.00	100.00

Construction machinery prices steady in August

The Bureau of Labor Statistics reported that wholesale prices of construction machinery and equipment showed no change in August over the July readings.

The latest BLS listing covers power cranes, tractor mounted machinery, specialized construction machinery, portable air compressors, scrapers and graders, hand-held air-tools, mixers, pavers and non-farm tractors.

Four new pipelines get CMP allotments

Thirteen large crude-oil pipelines and 10 large petroleum products lines, with a total construction cost of $390.8 million were granted priorities assistance by the Petroleum Administration for Defense for purchase of 205,669 tons of line pipe during the fourth quarter.

Among the projects receiving priorities assistance for the first time were four big pipelines. The four involved were:

A 960-mile crude line from Wink, Tex., to Norwalk, Calif., with a capacity of 200,000 barrels a day, to be built by the West Coast Pipe Line Co., at an estimated cost of $101.1 million.

A 1,595-mile products line, with an initial capacity of 300,000 barrels a day, from Port Neches, Tex., to Newark, N. J. to be built by the United States Pipe Line Co., at an estimated cost of $141 million.

A 196-mile products line, with a capacity of 96,000 barrels a day, from Port Arthur, Tex., to Baton Rouge, La., to be built by the Texas Pipe Line Co., at an estimated cost of $12.9 million.

A 90-mile products line, with a capacity of 110,000 barrels a day to transport petroleum products from refineries in the Philadelphia area to New York harbor, to be built by the Sinclair Pipe Line Co., at an estimated cost of $8.9 million.

Bond election scheduled

Voters of Wichita, Kan., will ballot Nov. 4 on a $23.5-million bond issue to finance extensive public works improvements. Some of the major items are: storm sewers, $9.9 million; sewage treatment plant extension, $1.9 million; additional water supply facilities, $11.8 million.

Plan California dam

The Department of the Interior has asked federal agencies and California state officials to review a planning report which calls for construction by the Bureau of Reclamation of a $14.3-million dam on the Cayuma River, seven miles from Santa Maria. The project would also include construction by the Corps of Engineers of levees and channel improvements at a cost of $10.3 million.

Activity This Week

As reported to ENR
(in millions of dollars)

Contracts by type of work

	This Week	Cumulative 39 wks 1952	1951	% chge
Waterworks	$1.8	$169.3	$162.1	+4
Sewerage	3.9	221.7	244.2	−9
Bridges	3.5	290.3	254.8	+14
Highways	21.7	1,164.0	916.3	+27
Earthwork, waterways	15.9	378.2	422.7	−11
Buildings:				
Public	129.3	3,778.7	1,717.3	+120
Housg., pub.	4.0	507.6	557.9	−9
Housg., priv.	68.6	2,278.7	1,459.9	+56
Commercial	14.7	470.5	498.2	−6
Industrial	38.3	2,002.7	3,153.6	−36
Unclassified	15.5	994.3	1,337.5	−26
Total	**$317.2**	**$12,256.0**	**$10,724.5**	**+14**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR indexes		Base Year = 100 1913	1926	1949
Constr. cost.	Sept.	586.47	281.92	122.94
	Aug.	583.69	280.58	122.36
Bldg. cost	Sept.	424.79	229.63	120.75
	Aug.	422.36	228.32	120.06
Volume	Aug.	1,082	440	313

OFFICIAL PROPOSALS

Bids: October 15, 1952

Contract 2
Easterly Intercepting Sewer

CITY OF ELIZABETH, NEW JERSEY

Sealed proposals for the construction of Alterations and Additions to the Sewerage System will be received by the Board of Public Works of the City of Elizabeth, New Jersey, at a meeting to be held in the Council Chamber at the City Hall at 2:00 P.M., E.S.T., on Wednesday, October 15, 1952, and then publicly opened and read. No proposal will be accepted after said hour. Proposals will be received on Contract 2, Easterly Intercepting Sewer.

Information for Bidders, Proposal forms, specimen Contract, Plans, Specifications, and other pertinent Contract Documents may be examined at the office of the City Engineer, City Hall, Elizabeth, New Jersey, between the hours of 10 A.M. and 4 P.M. daily except Saturdays, Sundays and holidays and obtained upon making a deposit of Fifty ($50.00) dollars, which will be refunded to bidders within thirty (30) days after the proposals are opened and upon return of the data undamaged.

Extra copies of specifications may be obtained at the cost of Twenty ($20.00) dollars each and extra sets of plans may be obtained at the cost of Twenty-five ($25.00) dollars each, which sums will not be refunded. Extra sheets may be obtained at the cost of One ($1.00) dollar each which sum will not be refunded.

Prospective bidders will be required to fill in answers in Questionnaire of Financial Statement which is authorized by State Law and which must be approved by the Board of Public Works before bidders are eligible for bidding. Questionnaire forms may be obtained at the office of the City Engineer.

No proposal shall be considered unless accompanied by a Bid Bond of a corporation acceptable to the City, or a cashier's check or a certified check upon some good and acceptable bank, in the penal sum of 10% of the total amount of each bid as a guarantee that if the contract upon which the bidder has bid shall be awarded to said bidder, he will enter into a contract for the work and do so within the time stipulated in the Notice of Award for said work and failing in this so to do the bidder and surety shall forfeit to the City of Elizabeth, the amount of said Bid Bond or check. The Bid Bond shall be executed by the bidder and surety company on form furnished by the City.

A bidder to whom a contract is awarded shall furnish a Performance Bond on a surety company duly licensed in the State of New Jersey, in the sum of 100 per cent of the amount of the contract, conditioned upon the faithful performance of the terms of the contract.

The successful bidder will be required to comply with all State Laws governing the execution of Municipal contracts in the State of New Jersey.

The Board of Public Works reserves the right to reject any and all bids as it may deem best for the interests of the City of Elizabeth.

BY DIRECTION OF THE
BOARD OF PUBLIC WORKS.
George F. Cummings
Clerk, Board of Public Works.

U. S. Government

DEPARTMENT OF THE INTERIOR. Bureau of Reclamation. Sealed bids (Specifications No. DC-3803) will be received at Coulee Dam, Washington, until October 15, 1952, for furnishing labor and materials for completion of river channel slope protection, Grand Coulee Dam, Columbia Basin Project, Washington. Location: Coulee Dam, Washington. Principal item is the producing and placing of 30,000 tons of armor rock, minimum sizes 6 tons and 4½ tons; and other work. Completion time 540 days. For particulars, address Bureau of Reclamation, Coulee Dam, Washington; or Building 53, Denver Federal Center, Denver, Colorado.

Bids: October 23, 1952

Water Pumping Plant

LOW LIFT STRUCTURE
NORTHEAST STATION
FOR THE
DEPARTMENT OF WATER SUPPLY
CITY OF DETROIT, MICHIGAN
CONTRACT NO. NE-3

Sealed proposals for the construction of the Low Lift Structure for the Northeast Statio at 11000 East Eight Mile Road, will b received by the Board of Water Commissioners of the city of Detroit. Proposals shall be addressed to the Board of Water Commissioners, City of Detroit, Room 506 Water Building, 735 Randolph Street, Detroit 26, Michigan, and shall be endorsed "Proposal for Contract No. NE-3". Proposals will be received until 10:00 A.M. Eastern Standard Time, October 23, 1952, at which time they will be opened and read aloud in the Board Room, Fifth Floor, Water Board Building, 735 Randolph Street, Detroit 26, Michigan.

Included in the work is the completion of the construction of the substructure and the construction of the complete superstructure of the Low Lift Plant of the Northeast Station within and upon an existing foundation which was constructed as an open caisson. The existing caisson is of reinforced concrete construction, circular in plan, 94 feet in outside diameter with walls 8 feet thick, is approximately 110 feet in depth below Elevation 130 and rests on material classified as Hardpan. The work within the existing caisson portion and in the complete substructure includes the construction of heavy reinforced concrete pump suction and discharge flumes, surge flumes, collecting channels, and fireproof structural steel framing with concrete and steel grating floors. The superstructure is to be constructed circular in plan with an outside diameter of 104 feet (approximate), with a height of 55 feet (approximate), finished grade to top of coping, with structural steel rigid frames, reinforced concrete roof, masonry walls with limestone and granite facing and ceramic tile interior finish. The work also includes the furnishing and installation of a 20 ton bridge crane, an hydraulic hoist, passenger elevator, lighting, heating, ventilating, plumbing, sluice gates, miscellaneous large and small piping systems, large pump suction and discharge castings and fittings, some 54-inch diameter water main, and the installation of gate valves. The main pumping units and dewatering pumps will be furnished and installed under other contracts.

The Contract Documents, including the Notice to Bidders, the Forms of Proposal and Agreement, the Specifications, and the Contract Drawings may be examined during business hours, at the office of the Department of Water Supply, Room 706 Water Board Building, Detroit, Michigan. The Contract Documents may be obtained by making a deposit of Seventy-Five Dollars ($75.00) per set, which sum will be refunded upon the return of the complete Contract Documents in good condition within thirty (30) days after the bid date, or if used in making a bona fide proposal.

Each proposal shall be accompanied by a certified check or a satisfactory bidder's bond in an amount not less than five per cent (5%) of the total lump sum price bid, drawn payable to the City of Detroit, Board of Water Commissioners, as security for the acceptance of the Contract.

No proposal may be withdrawn for at least sixty (60) days after the scheduled closing time for receipt of bids.

The Board of Water Commissioners reserves the right to waive any informality in any bid and to accept any bid, or to reject any or all bids, should it deem it to be in the best interests of the City of Detroit so to do.

CITY OF DETROIT
BOARD OF WATER COMMISSIONERS
Oscar Wagner, President
George A. Shaffer, Vice President
Alfred J. Simpson
R. K. Williams
L. G. Lenhardt, Superintendent,
General Manager and Chief Engineer
E. H. Bauer, Acting Secretary

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3804) will be received at Bureau of Reclamation, Denver, Colorado, until October 28, 1952, and then publicly opened for furnishing labor and materials and performing all work for furnishing and installing two

OFFICIAL PROPOSALS

Bids: October 2, 1952

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, Albany, N. Y.—Pursuant to the provisions of the Highway Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time on Thursday, October 2, 1952 by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1				
		G. L. Nickerson, District Engineer, 353 Broadway, Albany, New York				
Schenectady	FARC 52-75	Scotia-Saratoga County Line, Pt. 2, S. H. 1609 Proj. No. S-758(2)	4.14	Asp. Conc. Ty. 1A, Opt.	$10,000 Plans $10	$170,000
Warren & & Wash.	FASSH52-14	Harrisenna-Fort Ann, Pt. 1, 2A & 2B Proj. No. S-36(3)	4.65	Bit. Mac. Opt. Rd. Mix Twin Box 20' R. C. Arch Deck 46.34'	23,000 Plans $25	425,000
		DISTRICT No. 3				
		William Robinson, District Engineer, Weigh Lock Bldg., Syracuse, New York				
Onondaga	FARC 52-8	Syracuse-Lafayette, S. H. 3365 Proj. No. FI-UI-397(3)	2.13	Asp. Conc. Ty. 2A	45,000 Plans $10	844,000
		DISTRICT No. 4				
		J. P. Larsen, District Engineer, Barge Canal Terminal, Rochester, New York				
Ontario	O. T. 52-13 R. C. 52-98	N. Y. State Thruway-Ontario Section-Sub. 14 (Manchester, Rte N. Y. 21 Interchange) Chapin-Palmyra, Pt. 2, S. H. 1549	2.88	9" Cem. Conc. Pavt. 12'-52' Wide (Intch.) = 2.38 Mi. Asp. Conc. Ty. 1A, Opt. = 0.50 Mi. Interchange Alpha I-Beam 261.5' Hy. Sep. Alpha I-Beam 288'	$41,000 Plans $25	751,000
		DISTRICT No. 5				
		C. R. Waters, District Engineer, 65 Court St., Buffalo, New York				
Erie	FAC 52-7	City of Buffalo:-Humboldt Parkway Extension (Agassis Cir.-Delaware Ave.) Proj. No. U-1087(2)	0.99 (Acc. 0.67)	Asp Conc. Ty. 2A = 1.59 Mi. Misc. Work = 0.07 Mi.	$45,000 Plans $15	850,000
Erie	FAC 52-13	City of Buffalo-Fuhrmann Blvd. High Level-Bridge (Cont. 1) Proj. U-750(6)	0.31	So. Abut. Piers A & B Subst. and So. Appr. Embankment	$20,000 Plans $10	367,000
		DISTRICT No. 8				
		J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, New York				
Westchester	HT 52-3	N. Y. State Thruway-Hudson Section Sub. 9B (Hudson River Bridge)	0.92	Dredging Foundation Work (Including Caisson & Piles) & Misc. Work	$725,000 Plans $25	13,308,000
Westchester	R. C. 52-95	Pelham Manor Village, S. H. 5375 Pelham-New Rochelle, S. H. 5374	0.78	Asp. Conc. Ty. 1A Opt.	$4,000 Plans $10	72,000
		DISTRICT No. 10				
		J. J. Darcy, District Engineer, Montauk Highway, Babylon, Long Island, N. Y.				
Nassau	R. C. 52-93	North Hempstead Turnpike, S. H. 9018 Valley Road Intersection with S. H. 9018(Co. Rd.)	0.30	9" Cem. Conc. Pavt. (Widen) = 0.13 Mi. Asp. Conc. Ty. 1A Opt. = 0.17 Mi.	$8,000 Plans $10	141,000
Nassau	SSP 52-2	Southern State Parkway	15.33	Drainage Facilities	$26,000 Plans $10	482,000
Suffolk	Detour 52-1	Sunrise Highway Extension (Phyaa Drive Detour)	0.90	Bit. Stab. Earth Pavt	$1,000 Plans $10	58,000

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders."

When optional types are permitted on contract with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

OFFICIAL PROPOSALS

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract is indicated below. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

U. S. Government

6,315-kva, 95-percent power factor, 240-rpm, 4,160-volt, 3-phase, vertical-shaft, 60-cycle, open-type, air-cooled, hydraulic-turbine-driven generators for Chandler Power Plant. The site of installation is near Prosser, Washington. Time allowed for completion will be 930, to 960 days. For particulars, address Bureau of Reclamation, Kennewick, Washington; or Building 53, Denver Federal Center, Denver, Colorado.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3801) will be received at Goleta, California, until October 16, 1952, for furnishing labor and materials for earthwork, pipelines, and structures, Glen Anne Laterals, Goleta Distribution System, Cachuma Project. Location: Near Goleta, California. Principal items are: 23,500 cu. yds., excavation and backfill; 200 cu. yds. concrete in structures; 350 barrels furnishing and handling cement; lump sum, constructing chlorination house superstructure; lump sum, furnishing and installing steel laterals; and other work. Completion time 240 days. For particulars, address Bureau of Reclamation, Goleta, California; or Building 53, Denver Federal Center, Denver, Colorado.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3806) will be received at Folsom, California, until October 16, 1952, for furnishing labor and materials and constructing Camp Creek Tunnel and Access Road, Sly Park Unit, American River Division, Central Valley Project, California. Location near Placerville, California. Principal items are: 6,000 cu.yds. tunnel excavation; 17,000 cu.yds. open-cut and road excavation; 1,600 cu. yds. concrete in lining and structures; 1,100 cu.yds. gravel road surfacing; and other work. Completion time 330 days. For particulars, address Bureau of Reclamation, Folsom, California; or Building 53, Denver Federal Center, Denver, Colorado.

OFFICIAL PROPOSALS

Bids: October 15, 1952

Construction of Substructure

OHIO TURNPIKE COMMISSION
361 East Broad Street
Columbus 15, Ohio

NOTICE TO BIDDERS

Sealed proposals will be received at the office of the Ohio Turnpike Commission at Columbus, Ohio, for bids on the construction of the substructure for a bridge to be built over the Cuyahoga River in Summit County, Ohio. Bidders will be required to furnish all labor, tools, materials, supplies, equipment, including floating equipment, machinery, vehicular transportation, and other facilities, utilities, and all things necessary or proper for, and to perform all work necessary or incidental to, the construction of the bridge substructure, complete in every respect, in strict accordance with the plans, specifications, and other contract documents.

The approximate quantities of the major construction items for the bridge substructure are as follows:

Dry and Wet Excavation.....9,500 C. Y.
Steel Bearing Piles.....35,000 L. F.
Concrete .....20,000 C. Y.
Reinforcing Steel .....813,000 Lbs.

Plans, specifications, and contract documents for the work to be performed are on file and may be inspected at the office of the Chief Engineer, Ohio Turnpike Commission, in Columbus, Ohio. A set of these papers may be purchased for the sum of $10.00, which sum is non-returnable.

All proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the contract documents.

Each proposal must be accompanied by a certified check on a solvent bank, payable to the order of the Ohio Turnpike Commission in an amount not less than 5% of the total amount bid in said proposal. Said certified check will be held by the Commission as a guarantee that, if the proposal is accepted, a contract will be entered into and the performance of the proposal will be secured.

All bids must be received on or before 10:00 o'clock A.M., E.S.T., Wednesday, October 15, 1952, in the offices of the Ohio Turnpike Commission, 361 East Broad Street, Columbus, Ohio, at which time they will be publicly opened and read.

The award of the contract, if it is awarded, will be to the lowest and best bidder whose proposal complies with all prescribed requirements. The Commission reserves the right to reject any and all proposals and to waive technicalities.

OHIO TURNPIKE COMMISSION
September 15, 1952

Bids: October 14, 1952

Routes S-3, 25 & 25-A, Passaic River Bridges

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

Serrating or notching of steel grid floors on draw spans of Passaic River Bridges, Routes S-3, 25 and 25-A, in Passaic, Bergen, Hudson and Essex Counties. The total area to be serrated under the contract items is—41,695 square feet.

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Thursday, October 14, 1952, at eleven o'clock (11:00 A.M. — EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

Bids: October 14, 1952

Rt. 35, Secs. 2A, 41 & 42, and Rt. 37, Sec. 2A

READVERTISEMENT
STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

Route 35, Sections 2A, 41 and 42, and Route 37, Section 2A. Drainage Improvement and underground Structures for Traffic Signals, Boroughs of Eatontown, Point Pleasant Beach, Point Pleasant, Seaside Heights and Township of Dover, Monmouth and Ocean Counties. Length 0.862 mile. The principal items of construction are:

Estimated:
528 cu. yds. Roadway Excav.-Earth
2,306 sq. yds. Pen. Gravel Shoulders
1,536 sq. yds. Gravel Base Course
1,156 sq. yds. Conc. Pavement, Rein. 9" thick
5,543 lin. ft. Rein. Conc. Pipe
116 lin. ft. Cast Iron Pipe
4 Underground Traffic Signal Systems

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Thursday, October 14, 1952, at eleven o'clock (11:00 A.M. — EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

U. S. Government

BIDS FOR SEWER CONSTRUCTION—Memphis District, Corps of Engineers, U. S. Army, P. O. Box 97, Memphis 1, Tenn. Sealed bids will be received at this office until 11:00 a.m., C.S.T., October 7, 1952, and then opened, for constructing approximately 28,050 feet, 60" concrete pipe sewer, 1 outfall structure, 30 manholes and appurtenant works in Memphis, Shelby County, Tennessee. $25.00 deposit required on plans. Information on request.

St. Paul District, Corps of Engineers, US Army, 1217 U. S. Post Office & Custom House, St. Paul 1, Minnesota—Sealed bids will be received at this office until 2:00 P. M., C.S.T., September 30, 1952, and then publicly opened, for Removal of Sunken Barge, Mississippi River, near Alma, Wisconsin. Information on request.

SEARCHLIGHT SECTION

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AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. E.N.R.

NEW ADVERTISEMENTS Address New York City Office, 330 W. 42nd St., N. Y. 36, for October 9th issue closing September 29th.

ENGINEERS

Structural, mechanical, and electrical for work on hydro-electric power developments. Write giving full experience record and qualifications.

HARZA ENGINEERING COMPANY
400 West Madison Street Chicago, Illinois

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

CITY ENGINEER—Wanted by the City of Marysville, Michigan, present population 3,000. Registered Civil Engineer preferred but will consider all graduate engineers. Address letters of application stating qualifications, experience, and salary desired to W. H. Lange, City Manager, City Hall, Marysville, Michigan.

ARCHITECTURAL SPECIFICATION writer, assistant, with knowledge of construction trades and building materials, for large Detroit office. Experienced man preferred, but will train architectural or civil graduate with proven writing aptitude. Long term employment with nationally known architects and engineers. Salary $5000-$6500 to start depending upon experience and education. Send resume of above, with data available. P-4976, Engineering News-Record.

CITY SUPERINTENDENT wanted for small southwestern Missouri city, to supervise electric distribution and generation, streets, water system, and disposal system. Submit resume stating education, experience, age and availability. Salary open. P-5449, Engineering News-Record.

DRAFTSMAN, EXPERIENCED in mapping large tracts of land, farms, lots and realty subdivisions. State age, experience, married or single and salary desired. Submit sample of mapping and lettering with application. Surveyor, P.O. box 472, Monroe, N. Y.

EXPERIENCED MAN for structural steel detailing, checking, or estimating. Send name, address, and list of qualifications to: Fabricated Steel Products of Indiana, Inc., 2025 South Main Street, South Bend 14, Ind.

PRODUCTION ENGINEER for large concrete products manufacturing concern operating a number of plants, manufacturing sewer, pressure and concrete pipe and other products in the eastern half of the United States. Applicant should be graduate Civil Engineer with field construction experience, ability to handle men and manage a production plant or field project. Excellent proposition with a bright future. Write P-5381, Engineering News-Record.

PROJECT MANAGER wanted for large industrial and heavy construction projects. Permanent position for experienced, aggressive man. Send complete experience resume to Geo. Sheaf & Company, 449 Neilston Street, Columbus 3, Ohio.

SALES ENGINEER for large concern in construction field. Must have degree in engineering. Prefer person having experience in contacting engineers and contractors. Position is located in Florida. P-5382, Engineering News-Record.

WANTED CONCRETE Engineer with sales experience. Salary, expenses and bonus. State full experience, qualifications, salary expected. Enclose recent picture. Prominent Southern California firm over 30 years. P-5389, Engineering News-Record.

(Continued on the opposite page)

DESIGNERS
HIGHWAY and STRUCTURAL

Excellent opportunities for immediate permanent employment with a progressive organization, having a long range program of important engineering work. Experience preferred, but not essential, in engineering design for highways, bridges, airports, industrial, special-purpose buildings, water and sewage treatment plants. Engineers needed also with experience in writing specifications and reports.

Desirable working conditions at salary commensurate with ability. Write for application blank. All replies will be held confidential and *will be promptly acknowledged.*

CAPITOL ENGINEERING ASSOCIATES
408 BURKE BLDG., 5 ST. PAUL ST. ROCHESTER 4, N. Y.

CONSTRUCTION ENGINEERS

Wanted by outstanding engineering and construction firm. Positions available for superintendents and resident engineers with steam-electric or hydro-electric power plant construction experience. Kindly submit complete resume to

P-5344, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

DESIGNERS AND DRAFTSMEN

Mechanical; Structural; Electrical; Architectural

For work in our Atlanta office on chemical plants, warehouses, and public buildings.

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RESIDENT ENGINEERS
RECENT GRADUATES

SEELYE STEVENSON VALUE & KNECHT
101 Park Avenue, New York 17, N. Y.
Telephone: MU 4-2500

SUPERINTENDENTS WANTED
PRESTRESSED CONCRETE WORK

Experience in Concrete Construction essential. Need not be Graduate Engineer. Travel throughout U. S. Some overseas assignments if desired after special training. Submit complete qualifications, availability, etc.

P-5376, Engineering News Record
330 W. 42 St., New York 36, N. Y.

The Tennessee Valley Authority wants Electrical Engineers to assist in the design, construction, and operation of large steam electric and hydroelectric projects and transmission systems. Salaries start at $3700, $4450, and $5325 for 40-hour week. All jobs carry automatic within-grade increases for satisfactory service, liberal vacation leave, sick leave, and retirement benefits. Design jobs are in Knoxville and Chattanooga, Tennessee. Field construction and operations jobs are at various sites in the Tennessee Valley area and at Paducah, Kentucky. Write the

TENNESSEE VALLEY AUTHORITY
Division of Personnel
KNOXVILLE TENNESSEE

A MAJOR OIL COMPANY
located in
SOUTH AMERICA
and affiliated with
STANDARD OIL COMPANY
(NEW JERSEY)

NEEDS DESIGNERS
STRUCTURAL
PIPING

Must have engineering degree and several years professional experience. Chemical plant or oil refinery experience desirable. Will be required to draft, design, and check oil refinery installations.

These are regular staff positions offering liberal salaries and benefit plans.

Box 308-J
Radio City Station New York 19, N. Y.

POSITIONS VACANT

(Continued from opposite page)

WANTED EXPERIENCED Structural Engineer and Designer to act as Chief Engineer and take charge of office estimating and detailing. Salary open, only top quality men. Send complete written information to Ohio Valley Steel Company, Wheeling, W. Va.

WANTED: SUPERINTENDENT or Estimator with experience in underground utility construction—electric and telephone conduits, gas mains, manholes, etc. Permanent position with long established New England contractor. Write P-5361, Engineering News-Record.

WANTED — SUPERINTENDENT for sewer, water, bridges and similar concrete work. Send qualifications, experience and salary expected to: United Construction Company of Michigan, 320 Houseman Building, Grand Rapids 2, Michigan.

SELLING OPPORTUNITY OFFERED

ATTENTION SALES Engineers! Here's an excellent opportunity for individuals having experience in contacting engineers and contractors. Must have degree in Civil Engineering. State briefly your experiences in first letter. Write SW-5383, Engineering News-Record.

POSITIONS WANTED

CIVIL ENGINEER: Resident or Contractor's Engineer, immediately available. Construction and layout of airports, highways, drainage, grading, paving. Inspection and field plan adjustments. Diversified engineering experience about 40 years including responsible supervisory U. S. and foreign assignments. Reg. P.E. N.Y. Willing to travel. Excellent references. PW-5241, Engineering News-Record.

CIVIL ENGINEER seeks job as contractors engineer or assistant superintendent or resident engineer for consultant. Experienced on construction of powerhouses, chem. plants, air base facilities, and general construction. Can handle supervision all trades, takeoff, costs, subs, field layout, plans & specs. Age 32, Lic. P.E. & L.S. in N.J., married, employed, BSCE 1941. Salary $150 wk. PW-5452, Engineering News-Record.

ENGINEER—ESTIMATOR: Industrial processing and boiler plants, utility and high-pressure piping, material-handling, all related equipment and structures, development of equipment. PW-5451, Engineering News-Record.

EXECUTIVE, BROAD experience in Heavy Construction and Finished Buildings, seeks new connections as Project Manager or in General Contractor's office. New Yorker, with long New York experience. Organizer, with sound knowledge of contracting, both field and office. Inquiries solicited from Contractors requiring top man to assume full charge. PW-5115, Engineering News-Record.

EXECUTIVE ENGINEER, long experience, management large company, heavy construction, docks, foundations, tunnels, difficult subaqueous structures, etc. PW-5428, Engineering News-Record.

FIELD ENGINEER—MIT Civil Engineer and Harvard Business School Graduate desires field engineering position with closely held contractor in which management and ownership participation is eventual possibility. Experience as WWII Engineer officer, and office engineer, Personal Manager, Assistant to President of large contractor. 28, married. PW-5411, Engineering News-Record.

GRADUATE, REGISTERED, Civil Engineer; 10 years varied experience; field and office. Four years in Latin American countries as water works engineer. Two years experience in design and construction of jet airfields. Desire permanent position with opportunity for advancement. Available immediately. PW-5409, Engineering News-Record.

MANAGER OF general contracting company, presently employed, civil engineer, twenty-five years experience in responsible charge of work, both highway and building construction, desires connection in managerial capacity on a profit percentage basis. Midwest location preferred. PW-5259, Engineering News-Record.

PROJECT ACCT. experienced all phases Const. Field Office. PW-5444, Engineering News-Record.

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All instruction by mail. Send today for sample lesson and complete details
GEO. E. DEATHERAGE & SON
5 E. Preston St. Baltimore 2, Maryland

POSITIONS WANTED

STRUCTURAL ENGINEER, graduate, licensed, age 32; 10 yrs. experience reinforced concrete and steel design, bridges, viaducts, and foundations; desires responsible position with future; midwest or west. PW-5387, Engineering News-Record.

REGISTERED CIVIL Engineer, 32, 7 years supervisory experience in highway design and construction, domestic and foreign. Assignment in South America desired. Fluent Spanish. PW-5415, Engineering News-Record.

CIVIL, STRUCTURAL, graduate engineer, single, 27. 3 years experience in bldg., bridge, sewer, highway design & construction. Desires position in South, Southwest, West or foreign. Prefer field or field & office position with future. Now working on Ohio Turn. at $6,000, will take a cut for the right position. C. F. Nicek, 517 W. Aldine, Apt 202, Chic., Ill.

ENGINEER, REGISTERED, civil graduate, 4 years experience design & construction, 4 years experience engineering sales in concrete & products field. PW-5463, Engineering News-Record.

SUPERINTENDENT, ROADS, Airports, heavy equipment. Twenty years construction experience, fourteen on foreign work, worldwide. Prefer foreign assignment. PW-5244, Engineering News-Record.

ESTIMATOR—GRADUATE engineer seven years successful experience large general contractor best of references desires opportunity of joining small company of individual contractor that would share ownership. PW-5401, Engineering News-Record.

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WANTED CONNECTICUT distributorship of Municipal and contractors equipment and supplies. New products introduction solicited. RA-5363, Engineering News-Record.

WANTED

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Bents 14' on centers
Totals 181 MBF of timber
PILES—18,364 l.f. Southern Pine to 78' all steel pointed and will be in perfect condition when pulled.
Complete Trestle now in service @ Lake Champlain between Alburg-North Hero, Vermont.
Owner will dismantle and have available in Fall of 1952.
AVAILABLE IMMEDIATELY
Southern Pine Piles 12/80', 6/75', & 2/65'.
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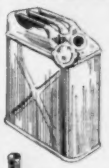
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FOR ONLY $1. EACH
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5 CANS FOR $5.00
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WITH BREATHER TUBE, SNAPS ON JEEP CANS 5 FOR $2.00 F.O.B. PHILA.
Rated Firms Open Account—Others Send Check

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The Oldest Equip. House in Phila.

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2000 lb. or 4000 lb.
State Condition, Age, Make, Location, Etc.
W-5286, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

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Sauerman Portable, 2 Drum Hoist, Cont. Motor
Sand & Gravel Screening Plant
Koehring-Dando, concrete mixer, Ioroy motor
Homelite Portable Pump & Engine, 3" disch.
R. W. OSTROM
Overlook Road R.D. 3 Poughkeepsie, N. Y.

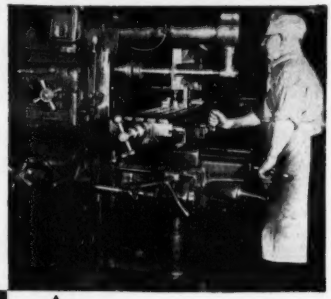
Used EUCLIDS for Sale
13-Yard Bottom Dump
22-Yard End Dump
Attractive prices
FEHRS TRACTOR & EQUIPMENT CO.
1509 Cuming Street, Omaha, Nebraska
Telephone—Atlantic 3127

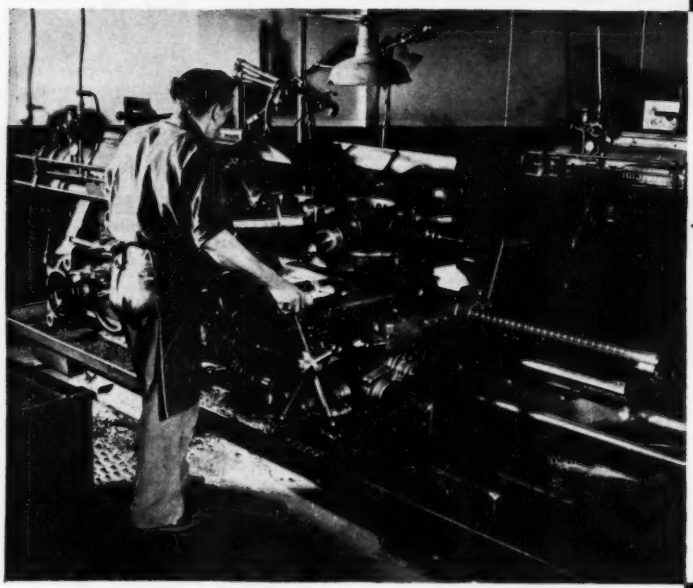
ASPHALT MACHINE
Hetherington & Berner Motor Paver, heavy-duty, self-propelled, with pneumatic tires. Machine like new.
FALLS CITY SALES CO.
1212 WILSON ST. LOUISVILLE, KY.
Tel: MAgnolia 1460

FOR SALE
READY MIXED CONCRETE PLANT
Complete, and in good condition, 100 cubic yards per hour capacity.
The Cincinnati Builders Supply Co.
Cincinnati 2, Ohio

5 DRUM SCRAPER HOIST
1-YD. CRESCENT SCRAPER BUCKET
(Sauerman Bros.) in new condition; with Hercules engine mounted; has all cables, chains, blocks, pins, eyes, etc. For sale $8,500 at location, Ridgefield Conn. A. Kosier (owner) 4 W. 40 St., N.Y.C. BR-9-0500.

He works with Doctor-like thoroughness

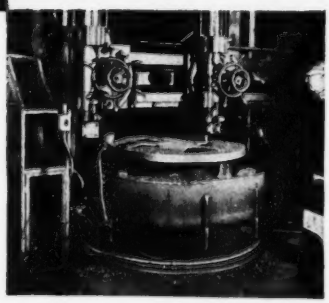




Milling operation on #3 Brown Sharpe milling machine.
Milling slot in Hoist control lever for American locomotive crane now being rebuilt for Babcock-Wilcox Tube Co., Barberton, Ohio.

Turret Lathe operation on #5A Gisholt turret lathe.
Turning—boring—facing and cutting to length. Bronze bushings for Lorain 820 turntable rollers. With parts in short supply as they are today, the ability to help ourselves is money in our customers' pockets.

Boring mill operation on 60 in. Niles vertical boring mill.
Turning and facing cylinder end casting for Robot laundry washer.



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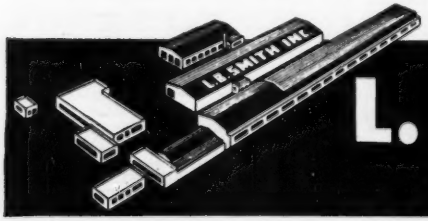
CONSTRUCTION EQUIPMENT

AN INVITATION

To Use the World's Largest Equipment Rebuilding Facilities

Where rebuilding is a business—with over 25 years of experience on all types of construction equipment—where highly trained mechanics with precision tools—can build back into your equipment many years of additional and efficient usefulness—using the same thoroughness employed in rebuilding our own used equipment.

You are invited to investigate our complete facilities.



L. B. SMITH INC.

CAMP HILL, SUBURB OF HARRISBURG, PA.

L. B. SMITH INC.

New and Used Equipment News

Prepared Monthly by Ed Woolford at Camp Hill, Pa.

VOL. 1 No. 6

AIR COMPRESSORS

Gardner-Denver 500 cu. ft. diesel, new condition.
Gardner-Denver 500 cu. ft. diesel, good operating condition.
Schramm 105 cubic foot gas powered compressor on 4 steel wheels.
Worthington two-stage, water-cooled, vertical 250#, 80 CFM, new condition.
Paving breakers, jackhammers, wagon drills, tie tampers.

QUARRY EQUIPMENT & BINS

2020 Cedarapids Double Impeller
2036 Cedarapids AAA primary unit on rubber.
1036/2418 Cedarapids Jr. Tandem unit on rubber.
4024 Cedarapids roll, rebuilt.
3018 Cedarapids roll, rebuilt.
Cedarapids Rock-It plant with 2025 jaw, 3033 mill. New.
Cedarapids 1236 Model 6C plant, new.
1030 Good Roads. Reconditioned.
10x7 Allis-Chalmers Blake type jaw crusher.
#1 Cedarapids Kubit impact breaker.
4' x 6' Kennedy Van Saun single deck.
3' x 6' Kennedy Van Saun triple deck.
15 cu. yd. Cedarapids sand drag, new.
16" x 90' bucket elevator.
80-ton, 2-compartment, 9'x18' storage bin with clamshell gates.
Special bins to your specifications.
Conveyors—18"—24"—30"—36". Also belt.

TRUCKS—TRAILERS

1½-ton Ford with any body.
2000-gallon tanks on semi-trailer mounting.
New and rebuilt dump bodies.

GENERATORS & LIGHT PLANTS

1½ KW to 125 KW, alternating and direct current gasoline and diesel powered.

SHOVELS—CRANES

Lorain 820 Dragline. New 1951.
Lorain 77, 1½-yd. shovel, gas or diesel power.
Osgood Model 900, 1¾-yd. diesel combination.
Lorain L-50, 1-yd. diesel. New condition.
Lorain 40 truck crane on Mack 3-axle truck.
Unit 1020, ½-yd. shovel, good condition.

SHOVEL & CRANE ATTACHMENTS

Lorain L-41 Chain Crowd Shovel Attachment. Rebuilt.
Lorain 40 Hi-Lift shovel attachment.
P&H 203 shovel attachment.
Chain crowd Lorain 30A shovel attachment.
Bucyrus-Erie 1½-yd. rock bucket.
McCaffrey Model 648 for 1¼ to 2-yd. crane.
McCaffrey Model 638 for ¾-yd. to 1-yd. crane.

Backhoe Buckets & Attachments

Lorain 30 hoe attachment complete.
¾-yd. Lorain, 40, LBS #9105. 44" cutting width.
¾-yd. Amsco 40" cutting width, LBS #9101.

CLAM—DRAG—SCRAPER BUCKETS

LIFTING MAGNETS

2—45" Ohio lifting magnets, rebuilt.
1—36" ECM lifting magnet, rebuilt.

SHOVEL DIPPERS

Lorain 41, ¾-yd. LBS #8600, rebuilt.
New Lima 1-yd. Amsco, LBS #2295.
Bucyrus-Erie 1¼-yd. gas air, LBS #3782, fair.
Lorain 75B, 1½-yd. manganese bucket, LBS #8538.
Lorain 75B, 1¼-yd. extended lip, 1¾-yd. LBS #2280.
Pettibone-Mulliken 2-yd. Lorain 82 or 820, manganese, LBS #5361.
Pettibone-Mulliken 2-yd. for 3500 Manitowoc LBS #5763.
Esco 2½-yd. cast weld dipper with bail & teeth.

CONCRETE EQUIPMENT

Blaw-Knox gas-electric finisher, 10½'-12½', rebuilt.
Koehring 10'-12' finishers, rebuilt.
Cleveland formgrader, new 1944, rebuilt.
Corr formgrader, new 1944, rebuilt.

TRACTORS

TD-24 International with Bucyrus-Erie angle-blade.
TD9 International diesel with 1 yd. Loadover.
Model CR Tournapull w/18-yd. Model E18 Tournarocker, rebuilt.

WELL DRILLS & TOOLS

Sanderson-Cyclone #42 well drill, new.
Sanderson-Cyclone #44 well drill, new.
Bits—Stems—Bailers—Sockets—Etc.

Barber-Greene 44C Trenching Machine 18" to 24" cutting width, 7' depth.

PUMPS

New Layne Bowler type 18 deep well pump with right angle gear drive. 3000 GPM at 126' TDH.
Used and rebuilt pumps, all sizes, gasoline, electric or diesel.

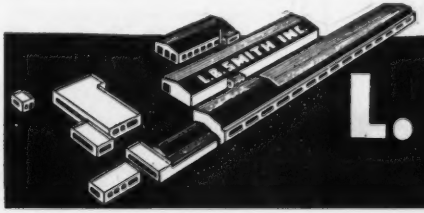
GRADERS

Austin Western 77 tandem drive, scarifier, 12' blade, gas power, hydraulic controls.

GASOLINE AND DIESEL ENGINES

Caterpillar D11000, rebuilt.
Caterpillar D13000, rebuilt
Buda, Hercules, Hill diesels, rebuilt.
New and rebuilt Murphy diesels, ME-4 & 48.

***Phone* HARRISBURG, PA. 7-3431**



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CAMP HILL, SUBURB OF HARRISBURG, PA.

DIESEL POWER

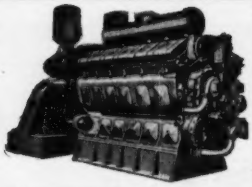
FOR

IMMEDIATE SHIPMENT

UNIT CAPACITIES—10 TO 1875 KVA

A.C.—50 AND 60 CYCLES

VARIOUS VOLTAGES



A PARTIAL LISTING OF OUR INVENTORY

KW	Make	Model	HP	RPM	KW	Make	Model	HP	RPM
1136	Fairbanks Morse	38D	1600	720	320	Enterprise	D8G-6	560	450
1100	General Motors	16-278A	1600	720	300	General Motors	8-268A	450	1200
1000	General Motors	16-567B	1440	720	200	General Motors	8-268A	350	900
750	General Motors	12-567	1080	720	100	General Motors	3-268A	150	1200
500	General Motors	8-278A	750	720	100	Worthington	B3S-5	150	600
500	General Motors	8-567	720	720	60	General Motors	6-71	90	1200
350	Baldwin	VO-6	510	450	30	Internat'l Harvester	UD-14	45	1200
320	Buckeye	80	480	600					

D.C. UNITS ALSO AVAILABLE

A. G. SCHOONMAKER COMPANY, INC.

DIESEL DIVISION, 50 CHURCH ST., NEW YORK 7, N. Y.

SALE OR RENT

1—D-6 Front-end Loader
1—25-Ton Link Belt HC-90 Truck Crane 120' Boom
1—20-Ton Bay City Truck Crane, 80' Boom, 15' Jib
1—20-Ton N.W. Truck Crane
1—¾ Yd. Bay City Diesel Crane
1—2 Yd. Koehring 803 Crane
1—30-ton Davenport Diesel Loco.
2—1¼ Yd. Bay City Crane or Shovel Diesel
1—¾ Yd. Lima 34 Shovel Diesel
1—45' Boom & 10' Jib for Link Belt 85 or 90, New
1—25-Ton G.E. Diesel Elec. Locomotive
1—50-Ton Whitcomb Diesel Elec. Locomotive
1—70-Ton G.E. Diesel Elec. Locomotive
2—No. 6 and 80-D Northwest Shovels
1—Northwest 25 Shovel Attachment
1—40-Ton Industrial Brownhoist Oil Fired Loco. Crane, New 1943

B. M. WEISS CO.

Girard Trust Co. Bldg. Phila. 2, Pa.
Rittenhouse 6-2211

FOR SALE

65 Ton G.E. Diesel Elec. Locomotive.
50 Ton Colby 240 Elec. Gantry Crane.
3 Yd Lima 1201 Dragline 120' Bm. 1947.
30 Ton Ind. Brownhoist Gas Loco. Crane.
½ Yd Link Belt LS-50 Shovel-Backhoe-Crane.
130 HP Christian 2D Diesel Hoist.
10 Ton Unit 1020 Pneu. Tired Crane.
25 Ton Wiley Steel Stiffleg. 110' bm.
Rex 200 Single Pumpcrete. Gas Powered.

MISSISSIPPI VALLEY EQUIPMENT CO.

509 Locust St. St. Louis 1, Mo.

SHOVELS—CRANES—DRAGLINES
Buc-Erie 170-B Electric Shovel. New 1949.
Buc-Erie 120-B Electric Shovel. 5 yds.
Page 625-S Diesel Dragline 150 ft. boom.
Page 618-S Diesel Dragline 110 ft. boom.
Koehring 304 Shovel ¾ yd. Rebuilt. Diesel.
P&H 855-B 1½ yd Shovel-Crane-Drag. Diesel.
Northwest 80-D Dragline. Diesel. 100 ft. boom.
Lorain Motocrane MC4 15-18 tons capacity.
Koehring 304 Truck Crane 20 tons cap. 80' boom.
P&H 255-A 20 ton Truck crane 80 ft. boom.
Link-Belt K-520, Diesel Shovel, 3 yds.
Link-Belt K-595 Dragline, 2½ yds. Diesel.
Lorain L-82 Diesel Shovel, 2 yd.

TRAXCAVATORS—PAYLOADERS
Cat. D7 Traxcavator. Rebuilt
Cat. D7 Traxcavator. Rebuilt.
Cat. D4 Traxcavator. Rebuilt.
Hough Payloaders Models HLA, HFH, HE, HA.

CONCRETE PLANTS—BINS & SILOS
B-K P-4120, 3 compt., agg., one for cement.
Large plant 212 yds., 6 compt., agg. and cement elevators, 56-S Mixer. Excellent.
Large plant 400 yds., 5 compt. with 2 yd. Koehring Mixers. Write for details.
Cement bin 400 bbls. with batcher. NEW.
Agg. bin 100 tons 3 cpts. 2 yd. weighbatcher. New.

ASPHALT PLANTS
Barber Greene Model 842 Utility Plant McCarter Iron Works Complete 3000# pug mill.
Cummer 1500 lbs. Semi-Port. Very good.
Std. 1500 lbs. Batch. Sta. Bit.
Simplicity Model S-100. Diesel powered.
B-G Model 840-830 Maintenance Plant. Complete.

STIFF LEG AND GUY DERRICK
Steel 35' stiff leg derrick 100' boom.
American 20 ton stiff leg derrick 90' boom.
Stiff leg derrick 15 ton 100 ft. boom.
American 20 ton Guy derrick 100 ft. boom.

CONCRETE MIXERS AND PAVERS
Jaeger BP-5 Asphalt Paver & attachments.
2 Ransome 34-E Dual Drum Paver Diesel.
Rex 28-S Builders Mixer, Elec. New 1947.
Koehring 4 yd tilting mixer complete electric.

ROAD AND AIRPORT FORMS
Blaw-Knox and Heltzel 8100 ft. 9"x9": 10,000 ft. 8"x8". 6000 ft. 12"x9" airport forms.

RICHARD P. WALSH CO.

30 Church St. New York 7, N. Y.
Cable RICHWALSH Cortlandt 7-0723-4

CRANES: 2—Overhead Electric Traveling Cranes 5 ton, 4 motor, bucket operating, 80' span, 440 volt, AC. Condition like new.

MINE HOISTS: 1—Vulcan single drum 3' dia., 2'6" face, 75 H.P., 220 volt, NEW condition. 1—150 H.P., 6'6" dia., 6'8" face. 1—Vulcan double drum, 8' dia., 4' face, one clutched, 200 H.P. motor. 1—250 H.P., 72" dia., 48" face. 1—150 H.P., 6'6" dia., 6'8" face. 1—Vulcan 1⅞" rope, 1500 FPM, complete with motor and controls. All 3 phase, 60 cycle, 2200 volt, with control equipment. Other hoists 100 H.P. to 1000 H.P. single and double drum, with electrical equipment. Head Frame for double shaft 16'9" x 17'2", height 55 ft., with or without 8 ft. dia. sheaves for 1½" rope.

COMPRESSORS: Worthington DC2, 29/18½ x 21, motor 600 H.P. synchronous, 440 volt, with all auxiliary equipment. 4—Ingersoll Rand model XVA, built 1950, cap. 1035 CFM, 200 H.P., 2200 volt, A.C. motors with all auxiliary equipment. NEW condition.

CRUSHERS, JAW: Sizes 12" x 15" to 48" x 60".

CRUSHERS, GYRATORY: Telsmith 16-B, all steel, opening 16" x 74", 75 H.P. motor, V-belt.

PIONEER PORTABLE ROCK or GRAVEL PLANT: 56A Unit with Traveling Grizzly Feeder; 30 x 42" roller bearing Jaw Crusher; Hopper and Mechanical Feeder; Built-in Folding Belt Conveyor; 150 H.P. Power Unit; offered with or without 54-VA unit, 300-WA unit and 42-VA unit.

DRYERS & KILNS: 2—Kilns 7'6" x 7' x 125 ft. complete with all auxiliary equipment, including Fuller movable grate type Coolers with all auxiliary equipment. 1—8 x 80 ft. 2—10 ft. x 90 ft., heavy duty, with or without auxiliary equipment, condition like NEW. One located Minnesota. 1—10 ft. x 25 ft. and one 5 ft. x 50 ft. 1—Ruggles Coles Dryer XAL, size 3 x 16', all complete with auxiliary equipment.

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1—Brookville 10T-30" Ga. Diesel—Like New.
1—Plymouth 20 Ton Diesel—48" & Std. Ga.
2—Plymouth 25 Ton—36" Ga.—Gas.
3—Whitcomb 15 Ton—36" Ga.—Diesel.
8—Trucks Complete with Motors. Whitcomb 65 Ton Diesel-Electric. Like new Bargains.

1—WHITCOMB-0-4-0-STD. GA, 50 TON DIESEL ELEC.—BARGAIN

19—Hopper Cars—15 Ton—36" Ga.
3—Hopper Cars—50 Ton. Excellent.
2—Conway Mod. 75 Muckers. #256 & 305. Bargains.
Southwark 500 Ton Hydraulic Press—High Speed—Like New.
3—Koehring WD-60 Dumptors.

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BROWNING 1947
Reconditioned and Guaranteed
Model T-15
15 Ton Motor Crane
Immediate Delivery

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STORAGE BATTERY

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1½ to 10 Ton — 18" to 56" Track Gauge
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Greensburg, Penna.

Locomotive Cranes
Crawler Cranes
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41-B, 50-B, 30-B, BE
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Derricks
Hoists

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1132 Prudential Bldg Buffalo 2, N. Y.

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3 ADNUN PAVERS

Converted to stone spreaders; spread to 12';
used 4 months $7800 ea.

STONE SPREADER

1 MENTES WILLIAMS to fit CATERPILLAR D-8;
used four months $2250
at Woodbridge, N. J.

SHOVEL CRANE DRAGLINE

1 LIMA 604 1½ c. y. Rud-O-Matic tagline; 60' boom;
new 1948 $27,000
at Junius, N. Y.

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VOLUME PUMPS

4—20" x 18" Economy Type MN horizontal centrifugal pumps direct connection to 300 H.P. electric motors, 3ph., 60 cy., 440 volt. Capacity . . . 12000 GPM at 88' Head . . . 8000 GPM at 106' Head
Price each fob Umatilla, Oregon . . $7,350.00

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Manitowoc Diesel Powered Speedcranes for rent. 25, 40 and 60 ton capacities with booms 100' or more, 20' and 30' jibs. Special price on long rentals.

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MANITOWOC SPEEDCRANES

Model 3500 — crane or dragline — 80 ft. boom — manual swing — 20' or 30' jibs — 60 ton lifting capacity — or 2¼ c.y. drag bucket.

Model 2000-B — crane or dragline — 60 ft. boom — manual controls — 20' jib — 25 ton lifting capacity — or 1¼ c.y. drag bucket.

McCARRICK BROTHERS, INC.
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FOR RENT

New Model 3500 Speedcrane, dragline, clamshell and liftcrane, 60-ton capacity.
New Ingersoll Rand 600' Gyro-Flo Air Compressor.
New Lorain Truck Crane, 25 Ton capacity.

FOR SALE OR RENT

Marion 302 and Koehring 803 dragline, clamshell, lift crane and pile driver combinations. McKiernan-Terry S-5 and 11B-3 Pile Hammers.

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COMPRESSOR
(STATIONARY - PORTABLE)
FROM
Compressor Men

GAS • DIESEL
ELECTRIC • STEAM
20 lbs. to 3000 lbs.
30 CFM to 2500 CFM
Rental—Rental Purchase
—50 YEARS OF SERVICE—

American
AIR COMPRESSOR CORP.
DELL AVE. & 48th ST. NORTH BERGEN, N. J.

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from old French "buket," means a vessel to hold liquids?

DO YOU KNOW THAT ECA
stocks all types, uses, brands of construction buckets?

THIS MONTH'S SPECIAL
1 YD. CLAM. BUCKET
1—1 yd. Blaw-Knox Single Line Hook-on Clamshell bucket #B-10060, Mdl. 311-W. Wt. 3400#. Like new. A Real Buy.

AIR COMPRESSORS
Portable, 2-stage
36—Air Compressors, Sullivan, LeRoi, Chicago Pneu., Ing. Rand, Schramm, Gardner Denver—60, 105, 160, 210, 315 and 500 cu. ft., both gasoline and Diesel powered.

BUCKETS, CLAMSHELL
1—2¼ yd. Blaw Knox Speedster, size 125, rehandler, wt. 5000#.
1—2 yd. Williams dredging #3552 wt. 7000#.
1—1½ yd. Williams rehandler #1689, wt. 4450#.
1—1¼ yd. Williams Hercules hvy. duty digging, #1732, wt. 6200#.
2—1 yd. Owen Type D hvy. duty size 136, wt. 4500#.
1—⅝ yd. Owen Type D hvy. duty, wt. 3000#.

BUCKETS, CONCRETE
2—5 yd. Laydown type Gar-Bro, double clam. gate opening size 20x28". Like new.
1—3 yd. Blaw Knox SX90 roller gate, wt. 2200#.
1—2 yd. Gar-Bro laydown ready mix type, wt. 1500#.

BUCKETS, DRAGLINE
2—Northwest Type H 2½ yd. wt. 4000# ea.
2—1 yd. Page Mdl. RH Automatic, wt. 3700#.
1—½ yd. Page Mdl. RH, wt. 2100#.

CRANES, CRAWLER
1—P&H Mdl. 255A ¾ yd. crane, Ser. 5750, power 6 cyl. Waukesha gas eng., 35' boom, fairleads, Rudomatic tagline.

DERRICKS
Several GUY and STIFFLEG DERRICKS, from 10 to 30 ton capacity

HOISTS, STEAM
1—10½x12 D/D Lambert w/space for boiler. 13,000# line pull.
1—10x12 D/D Mead Morrison. 16,000# @ 150 FPM. Wt. 17,000#.
1—9x10 D/D Lambert, skeleton type, drums 14x24x7".
1—8½x10 D/D Lambert w/space for boiler, drums 14x25x7".
1—8x12 3/drum Mundy, 9500# single line.
2—8¼x10 D/D. American & Clyde. 9,000# single line. Wt. 10,000#.
3—7x10 D/D Lidgerwood. 5,000# single line. Wt. 7,000#.

We Have a Large Supply of Hoists—Gas, Diesel, Electric and Steam

PILE HAMMERS
3—McKiernan Terry 9B2 with pants, drive H beam or round piling. Wt. w/pants 7500#.
4—#6 McKiernan Terry, w/pants or guides. Wt. 2900# ea.
1—#3 McKiernan Terry, wt. 575#.
1—#2 McKiernan Terry, wt. 343#.
7—#1 McKiernan Terry, wt. 145#.
2—#8 Union Pile Hammer, 2000# ea.

PUMPCRETE
1—Mdl. 190 Rex Single Pumpcrete #Cp114. Main power plant 4 cyl. Waukesha gas eng. complete with remixing hopper powered by 4 cyl. LeRoi gas eng. Recommended pumping distance 1000' with 7" pipe. Max. vert. lift 110'. Cap. 23 to 30 cu. yds. per hour. Excellent shape. A Real Buy.

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1—400 K.W. Enterprise Dual Fuel Generating Plant consisting of a Mod. DGSG-8 (650 H.P.) Enterprise dual fuel engine direct connected to a 400 K.W. Elliott Mod. 6539, 3ph., 60 cycle, 2400 volt A.C. generator—450 R.P.M. This plant was new in 1948 and is complete with switchboard, filters, cooling system, piping, etc. Has operated approximately 500 hours since overhaul.

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AMERICAN CRANE

Steam, 50 ton revolver. 60' gantry, one year minimum.

J. L. PRAYTOR
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FOR RENT

2—Manitowoc 3000B Cranes.
1 new and 1 in AAA condition. 100 foot of boom and 20 foot of jib for each.
1—Marion 1-½ yd. Crane.
Model 362 with shovel front, in very good condition.

DICK CONSTRUCTION COMPANY
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INDUSTRIAL RUBBER PRODUCTS FOR EVERY PURPOSE

IMMEDIATE DELIVERY OF CONVEYOR, ELEVATOR AND TRANSMISSION BELTING — PIPE, WATER, SUCTION, AIR, STEAM AND WELDING HOSE

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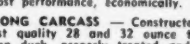
TOUGH COVERS—Heavy duty, specially compounded abrasive resistant rubber covers having high tensile strength. Thoroughly capable of withstanding the abrasive action of bulk materials. Properly vulcanized to the carcass to assure utmost performance, economically.

STRONG CARCASS — Constructed of finest quality 28 and 32 ounce tough cotton duck, properly treated and impregnated to avoid mildew from moisture and atmospheric conditions. Each ply thoroughly embedded in rubber to prevent ply separation.

FLEXIBILITY — Careful attention has been given in the construction of all belts to have the proper flexibility assuring the following desirable features; troughs easily, runs true on all idlers, gauge resistant, excellent for long and short hauls and slope installations.



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We carry in stock for your immediate requirements, Conveyor Belting in widths from 8 inches to 48 inches.

Width	Ply	Thickness Top Cover	Thickness Bottom Cover	Type of Duck Carcass
8"	4	1/16"	1/32"	28 Oz.
10"	4	1/16"	1/32"	28 Oz.
12"	4	1/16"	1/32"	28 Oz.
14"	4	1/16"	1/32"	28 Oz.
16"	4	1/8"	1/32"	28 Oz.
18"	4	1/8"	1/32"	28 Oz.
20"	4	1/8"	1/32"	28 Oz.
20"	5	1/8"	1/32"	28 Oz.
24"	4	1/8"	1/32"	28 Oz.
24"	5	1/8"	1/32"	28 Oz.
26"	5	1/8"	1/32"	28 Oz.
30"	4	1/8"	1/16"	32 Oz.
30"	5	1/8"	1/16"	32 Oz.
30"	6	1/8"	1/16"	32 Oz.
36"	6	1/8"	1/16"	32 Oz.
42"	5	1/8"	1/16"	32 Oz.
48"	5	1/8"	1/16"	32 Oz.
48"	8	1/8"	1/16"	32 Oz.

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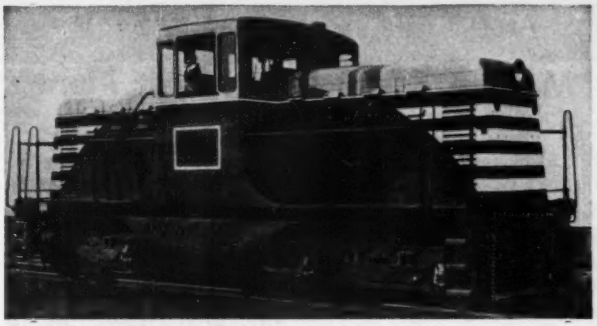

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Complete with auxiliaries.

General Electric Turbo Unit

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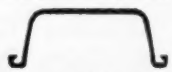

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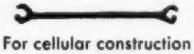

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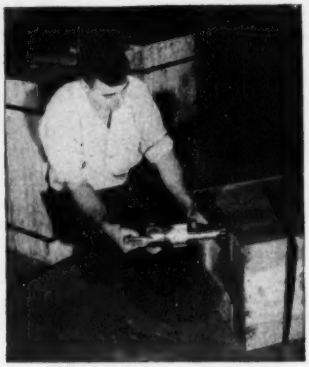


Portable electric saw cuts through almost anything

The photos above show only three of the hundreds of applications to which contractors can put the new Sawzall, a lightweight, reciprocating electric saw that's a self-contained unit—not an attachment. The figure at the left shows how it can zip through corrugated Transite sheeting, just as it does through wood, Masonite, Formica, galvanized sheet, wire nails and the like. Center photo illustrates the ease with which it can cut through curves or irregular shapes and the right-hand photo shows how it isn't even slowed down by nails and crate straps. This latter application leaves all nails cut clean, with no protruding edges; what's more, the boards are free from splinters, breaks and gouges which even the best nail pullers leave.

The 110-v universal type motor is equipped with lifetime-lubricated ball, roller and anti-friction bearings. All windings are of special, heat-resistant wire, multiple-insulated and provided against overload conditions. Housing is of rigid, die-cast aluminum; a multiple-bladed fan provides maximum cooling efficiency; hardened steel helical gears give smooth, quiet performance with less wear and greater working power. UL-approved starting switch is lockable for continuous running.

The machine needs no starting hole for cutting sleeve openings, etc. The operator merely holds the tool against material, using edge of the shoe guide as a fulcrum. Then he squeezes the starting trigger and bears down on the nose of the unit to bring the reciprocating blade tip into contact with the work—still holding the edge of the shoe guide firmly against the stock. As the blade cuts through, the saw is brought upright so that the shoe guide rests firmly on the work, from where the direction of a cut can be guided.

Fifteen assorted blades come packed with the machine and they can cut through practically any sawable material. Additional blades for all needs come 10 to a pack. MILWAUKEE ELECTRIC TOOL CORP., MILWAUKEE 8, WISCONSIN.

Air-operated hoister lifts cars or trucks

With a simple turn of an air valve the mechanic shown here was able to lift a heavy automobile 50 inches! Now it's a stand-up job to replace an exhaust pipe, adjust shock absorbers, rebush front ends, pack wheel bearings or perform hundreds of jobs which heretofore required either a full-size car lifting device or uncomfortable on-your-back work. The Homestead Hoister pictured is No. 5 model, a big sister to the other model No. 3. It measures only 34 x 70 x 33¼ in., weighs 550 lb. and lifts 5,500 lb. through ten positions to a full 50-in lift.

The smaller model measures 30 x 67 x 28½-in. weighs only 315 lb. and is capable of lifting 3,000 lb. through a full 53 in.

In actual trials the Lifters have saved as much as 50% of the mechanic's time by raising each job to the most convenient height. It's fully (*New Products continued on* p. 104)

FROM THE CANADIAN BORDER TO THE GULF OF MEXICO... from the Rockies to Lake Michigan, the Ohio and Mississippi Rivers... this is the broad sweep of the Great Plains served by Lock Joint's permanent pipe manufacturing plant at Turner, Kansas. Specializing in Lock Joint Prestressed Concrete Cylinder Pipe in diameters from 16" to 48", designed for any pressure common to water works practice, the Turner plant also answers demands for this type of pipe in the Great Lakes area.

...LOCK JOINT CONCRETE PRESSURE PIPE is readily available east of the Mississippi from the Company's three other permanent plants in Wharton, N. J.; Detroit, Mich., and Columbia, S. C. Together these four strategically located plants are equipped to handle any contract, however large or small, and offer the ultimate in modern Concrete Pressure Pipe in a variety of standard diameters.

SCOPE OF SERVICES—Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply and Distribution Mains 16" in diameter or larger, as well as Concrete Pipes of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.

LOCK JOINT PIPE COMPANY

Established 1905

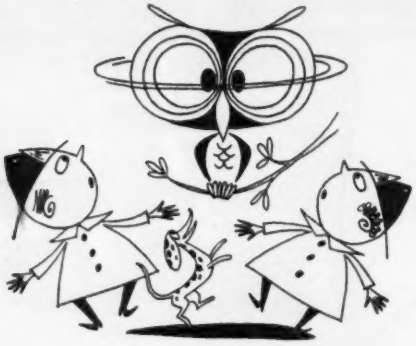
P. O. Box 269, East Orange, N. J.

PRESSURE PIPE PLANTS: Wharton, N. J., Turner, Kan., Detroit, Mich., Columbia, S. C.

BRANCH OFFICES: Casper, Wyo. • Cheyenne, Wyo. • Denver, Col. • Kansas City, Mo. • Valley Park, Mo. • Chicago, Ill. • Rock Island, Ill. • Wichita, Kan. Kenilworth, N. J. • Hartford, Conn. • Tucumcari, N. Mex. • Oklahoma City, Okla. • Tulsa, Okla. • Beloit, Wis. • Hato Rey, P. R. • Caracas, Venezuela

LOCK JOINT
Reinforced Concrete
PRESSURE PIPE

Head turns all the way around



Nozzle direction may be changed easily and at any time by simply loosening the bolts in the swivel flange and turning the head . . . The number and size of nozzle outlets can be changed by replacing the head, and without shutting off the water.

MATHEWS
HYDRANTS

Made by R. D. Wood Company Public Ledger Building, Independence Square, Philadelphia 5, Pa. • Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves

Mathews Modernized Hydrants . . . Tops in Convenience and Dependability Compression-type valve prevents flooding • Head turns 360° • Replaceable head • Nozzle sections easily changed • Nozzle sections raised or lowered without excavating • Protection case of "Sand-Spun" cast iron for strength, toughness, elasticity • Operating thread only part to be lubricated • All working parts contained in barrel • A modern barrel makes an old Mathews good as new • Available with mechanical joint pipe connections

"GUNITE" CONCRETE
(Since 1915)

FOR • STEEL PLATE LINING • STEEL ENCASEMENT • BUILDING NEW WALLS • LINING WATER RESERVOIRS, TUNNELS AND SEWERS • PLATE LINING OF STEEL STACKS, BUNKERS, DUCTS • REPAIR OF DISINTEGRATED CONCRETE AND MASONRY • CANAL, DITCH AND DRAIN LINING

GUNITE CONCRETE & CONST. CO.
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District Branch Offices

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George R. Lewis Co., 2038 Queen Ave. S., Minneapolis 5, Minn.
B. H. Moeller Co., 9625 Delmar Blvd., St. Louis 4, Mo.
Otto K. Olsen Co., 823 Perdido St., New Orleans, La.
Phillip D. Bernard, 2806 Addison, Houston 5, Tex.
Western Steel Prod. Co., 1756 W. 19th Ave., Denver 4, Colo.

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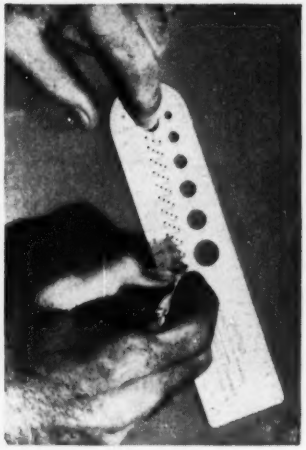
Diamond and Shot Core Borings
Dry Sample Borings
Grout Holes and Pressure Grouting
Foundation Testing for Bridges, Dams and other Heavy Structures

Also
Manufacturers of Diamond and Shot Core Drills, Accessories & Equipment

SPRAGUE & HENWOOD, Inc.
Dept. E, Scranton 2, Penna.

portable and can be used outdoors or on upper floors. The only requirement is an air hose with at least 80 psi pressure, although best pressure is 120 psi.

Exhaust ports prevent piston overtravel and a safety lock can hold the load at any one of the ten working heights. Up-ended storage is only 30 in. sq when not in use. The Lifters can handle trucks, front or rear, with equal ease. HOMESTEAD VALVE MFG. CO., HYPRESSURE JENNY DIV., P. O. BOX 31, CORAOPOLIS, PA.



"Circ-L-Scale" offered free

The new, useful device shown here has been approved by the American Society of Industrial Engineers and is a combination compass, scale, square, protractor and lettering guide. It's small, handy and durable; made of Vinylite plastic because of its low coefficient of expansion. On the reverse side are a temperature conversion table, list of decimal equivalents, tap and drill scale and a metric rule. It's offered free by UNISTRUT PRODUCTS CO., DEPT. R, 1013 W. WASHINGTON BLVD., CHICAGO 7, ILL.

New safety hat is made of Fiberglas

Said to have a lower crown than any other safety hat or cap, a new type has an air space between the hammock and crown that is ¼ in. in excess of the 1¼ in. required by most safety codes. This permits freer circulation of air with more wearer comfort.

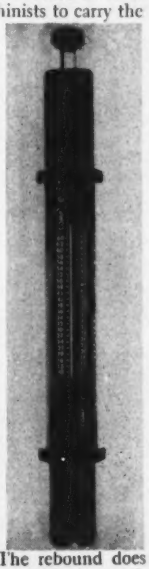
The Hard Boiled Cap as it is called is made of Fiberglas in only one size, but headbands are quickly adjustable

to sizes from 6⅞ to 7¾. The brim is shaped to form a rain trough and the crown is grooved along the top.

On tests for radiation, insulation, strength, inflammability, water absorption and aging, the new hat exceeded the most rigid requirements, according to the manufacturer. Dielectric strength is high and caps immersed in brine withstand application of 2,000 potential for one minute. SAFETY FIRST SUPPLY COMPANY, 425 MAGEE ST., PITTSBURGH 19, PENNA.

Metal hardness tester fits easily into pocket

Penetration-type hardness testers for metals have often been beyond the pocketbooks of machinists and small companies. Also, testing machines have often been mounted because of their weight, forcing machinists to carry the stock to the tester. By using this new tester, which works on the rebound principle, the manufacturer says that an operator can test stock that's still in a lathe or other machine.



The operator merely extends a spindle to its full height and depresses the trigger, allowing the ball to rebound to a spot where it stops and is held automatically. He can then read the hardness from three different Rockwell and Brinell scales without the use of conversion tables. The rebound does not mar the surface nearly as much as penetration types; there are no diamond points to grind or wear out, no penetrating balls to deform as on standard machines.

It's unconditionally guaranteed for a period of one year and is said to continue to give accurate readings indefinitely. Periodic checking is unnecessary since the instrument can be kept in calibration by using standard test blocks of known value. It has also been used successfully for testing materials such as Fiberglas, laminates, plastic sheet stock, wood, hard rubber, etc. PEABODY INDUSTRIES INC., 1819 BROADWAY, NEW YORK 23, N. Y.

See how the BROS SNO-FLYR chews up rock-like drifts

The Sno-Flyr's rotating feeding rake chops vertically at hard-packed banks, shattering the snow and delivering it back into two dual-sided rotor discs which whip it straight up and out the casting chutes.

Bros "single direction" snow travel design is the shortest and most effective method of handling. In light, fluffy snow the Sno-Flyr can plow at speeds up to 25 m.p.h.

Plow moldboard is 9' wide, has two snow wells. Special gathering wings on sides increase plowing width to 14'. Exclusive optional loading chutes fill trucks on either side faster with "swing loading" delivery. All Sno-Flyr controls are hydraulic, grouped in a convenient cab control bank.

Greatest new Sno-Flyr features are the "finger-joint" chute cappers described below.

EXCLUSIVE CASTING CHUTES—TURN 345°, CAST ANYWHERE

You've never seen anything like it! By separate hydraulic cab controls, the operator can aim the chutes in any direction, individually or together. And for the greatest possible positive control, he can adjust height of snow stream arc in a split second with the exclusive Bros segmented capping devices . . . just like crooking your finger! He can spot-cast up to 150' away, casting high with favorable winds or casting low into the wind. He can cast up over banks or cuts. No other rotary offers snow stream control like this!

GET LATEST ROTARY CATALOG

This Bros Sno-Flyr catalog is packed with pictures and detailed explanations of Sno-Flyr performance. It's a must for any engineer interested in the most efficient snow removal at the lowest cost. Write for your free copy today!

WM. BROS BOILER & MFG. CO.

ROAD MACHINERY DIVISION • MINNEAPOLIS 14, MINNESOTA

SNO-FLYR models also available for graders and crawler tractors, as well as units for railroad and high altitude work.

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Over 50 years ago Walter Irving founded what is now the Irving Subway Grating Co. Shortly thereafter he conceived the idea of Open Steel Flooring and a new industry was born. Since that time experience has taught us a lot about grating, its use and its properties. We will be happy to share this experience and know-how.

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OFFICES and PLANTS at
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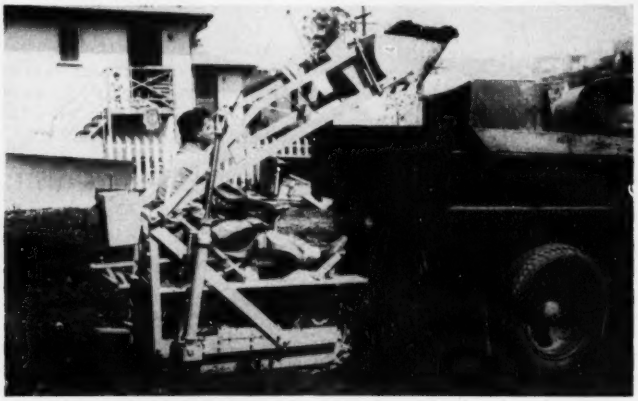
for alum, lime, soda ash, ferric sulphate, sodium fluoride, carbon, and other water treatment chemicals. For Bulletins and complete information, address Omega Machine Company, (Division of Builders Iron Foundry), Providence 1, Rhode Island.

OMEGA

Power feeder for Delta radial saws

An exclusive vari-speed safety power feed is now available for use on Delta radial saws. An operator can pre-set the rate of feed he wants, depending on the material to be cut, to any speed from 20 to 100 fpm by merely turning a dial. In this way inexpensive electric horsepower is used instead of costly muscle power to provide simplified, faster material handling. As blades lose their sharpness, adjustments can be made with a simple twist. When not in use the power feed unit can be lifted out of the way. DELTA POWER TOOL DIVISION, ROCKWELL MFG. CO., MILWAUKEE 1, WIS.



Hydraulic high-lift bucket for Agricat

Just a year ago we announced the latest attachment for the midget Agricat (6-ft. long) tractor as a rotary broom (ENR Aug. 2, 1951, p. 108). This year it's a hydraulically-controlled front-end bucket with a high lift and 5 ft. capacity.

A Vickers 1,000-psi pump feeds two rams whose pushing capacity is 491 lb and pulling capacity 368 lb per 100 lb of pressure. Bucket height travel is from 4 in. below track level to 72 in. above ground.

Used with suitable attachments the small machine has proven its worth on such diverse jobs as leveling, landscaping, snow removing, plowing, harrowing etc. With the new high-lift bucket it will be able to do light excavation work as well. Manfacturer is EARL H. PENCE & CO., INC., 2150 WASHINGTON AVE., SAN LEANDRO, CALIFORNIA.

(*New Products continued on p. 108*)

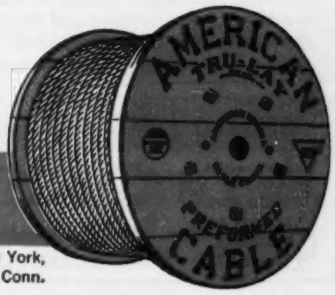
an **ACCO** product

TRU-LAY Preformed WIRE ROPE

● For each use there is *one best* wire rope . . . one that will stand repeated loading, abrasion, crushing, or continuous bending, and be the best rope to buy.

To achieve this, there is a TRU-LAY Preformed Wire Rope made in a special construction for your equipment. This construction has the exactly right combination of strength, bending life, and resistance to wear and crushing that you need.

The one best wire rope . . . TRU-LAY Preformed . . . will last you longer and cost less to use. Specify and get TRU-LAY Preformed improved plow steel—the rope identified by the Green Strand.



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—on Dozing, Scraping & Dragline Operations

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Stop wasting 40 or 50 feet of good rope whenever 10 feet or so become crushed or cut on the drum. Mount a reel of Tuffy Dozer Rope just back of the wedge socket . . . feed just enough new rope through the socket to *replace only the damaged part.* ½" rope available in 150′ reels.

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PUBLICATIONS

Tectum Roof Plank—is the trade name of a structural, insulating building material made of wood fibers bonded with a tough cement. A 4-p. folder shows an amazing number of uses to which it can be put, including installation over wood bow string trusses and metal nailing joists. Shingles or felt can be applied right over it, saving installation time and expense. A table contains precise information on allowable clear spans for various floor loads. TECTUM CORP., 105 S. SIXTH ST., NEWARK, OHIO.

Specifications for application of FOAMGLAS—This 16-pager contains information about many new applications for FOAMGLAS on ceilings, walls, floors, columns and beams. It lists finishes, adhesives, sealers, suggested thicknesses, paints and properties of the product. It is particularly concerned with application in low-temperature space installations (minus 35 to minus 50 deg F) and is available from PITTSBURGH CORNING CORP., 307 FOURTH AVENUE, PITTSBURGH 22, PENNA.

45 new brick home plans—Plans for 45 homes, representing a cross-section of modern architectural styling, are included in a new, highly-illustrated 64-p booklet. Most are designed to be built for less than $15,000 in the average home-building market. Reflecting the trend in American homeowners' tastes, 42 of these plans are for one-story ranch-type designs.

Designs call for cavity wall construction to assure maximum comfort and weather resistance—at the same time permitting the use of beautiful exposed masonry interiors. The plan-book may be purchased for 50¢ from STRUCTURAL CLAY PRODUCTS INSTITUTE, 1520 18TH ST., NW, WASHINGTON, D. C.

Roller chain and sprocket wheels—A new 148-p roller chain engineering data book (No. 2457) covers selection, installation, lubrication and maintenance of roller chain for drives, conveyors and sprocket wheels. For reference and easy identification the book contains a large number of photographs and line drawings of the many types and sizes of chain and wheels available. In addition, more than 50 typical conveyor chain attachments are shown.

Formulas, charts, diagrams and typical problems are all illustrated and

(*Continued on page* 111)

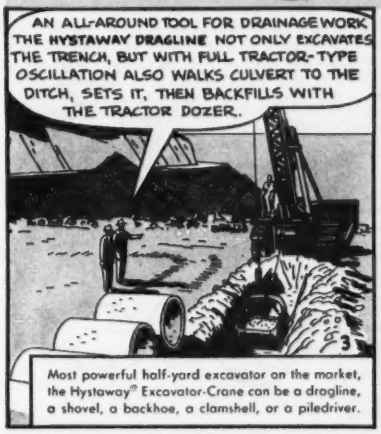
TOP JOB TEAM....

HYSTER *Tractor Tools and* CATERPILLAR *Diesel Tractors*

Every Caterpillar-Hyster dealer can tell you about Hyster tractor equipment...how it works with Caterpillar-built tractors...how this job team has been working together for almost a quarter of a century—he will give you a 16-page cartoon book illustrating the many uses for Hyster Tractor Tools.

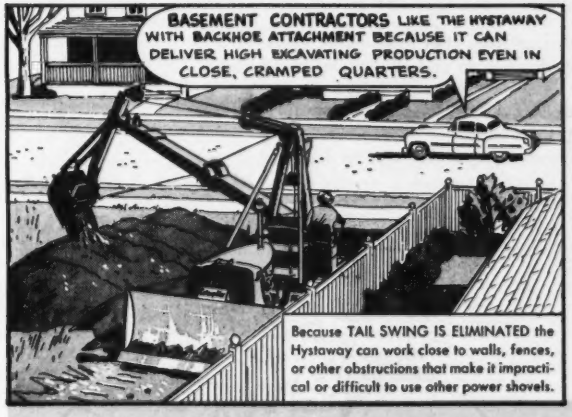
HYSTER® TRACTOR TOOLS IN ACTION

HERE ARE FOUR OF MANY WAYS HYSTER TOOLS TEAM WITH CATERPILLAR TRACK-TYPE TRACTORS TO SPEED PRODUCTION AND CUT COSTS FOR ALL TYPES OF CONTRACTORS.


AN ALL-AROUND TOOL FOR DRAINAGE WORK THE HYSTAWAY DRAGLINE NOT ONLY EXCAVATES THE TRENCH, BUT WITH FULL TRACTOR-TYPE OSCILLATION ALSO WALKS CULVERT TO THE DITCH, SETS IT, THEN BACKFILLS WITH THE TRACTOR DOZER.

Most powerful half-yard excavator on the market, the Hystaway® Excavator-Crane can be a dragline, a shovel, a backhoe, a clamshell, or a piledriver.

FAST SWING, HEAVY-DUTY DIESEL TRACTOR ENGINE POWER PAYS DIVIDENDS IN THE MINING INDUSTRY WHERE THE HYSTAWAY SHOVEL IS MAKING SMALL OPEN-PIT MINING PROFITABLE.
Tractor tool applications shown here are from Hyster's new 16-page cartoon book, "A Story of Tractor Tools and Their Uses". Write for copy.


BASEMENT CONTRACTORS LIKE THE HYSTAWAY WITH BACKHOE ATTACHMENT BECAUSE IT CAN DELIVER HIGH EXCAVATING PRODUCTION EVEN IN CLOSE, CRAMPED QUARTERS.

Because TAIL SWING IS ELIMINATED the Hystaway can work close to walls, fences, or other obstructions that make it impractical or difficult to use other power shovels.

A Hyster tractor winch INSURES against work stoppage or down time...RESCUES mud-bogged equipment—PULLS the tractor itself out of mud—provides essential TOWING SERVICE to meet any situation.

Hyster manufactures an extensive line of tractor-mounted and tractor-drawn equipment for contractors—included are Winches, 2 and 3-Drum Hoists, Grid Roller and the Hystaway Excavator-Crane (half-yard Shovel, Backhoe, Dragline, Clamshell, Crane, Pile Driver). Hyster Tractor Tools are sold and serviced by more than 700 Caterpillar-Hyster dealer stores. For complete information, consult your dealer or write for literature.

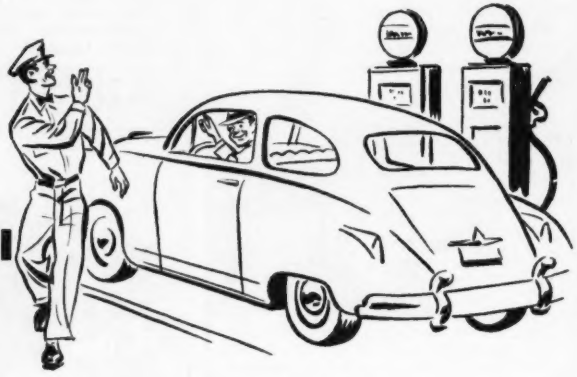
HYSTER COMPANY

2953 N. E. CLACKAMAS ST...PORTLAND 8, OREGON
1853 NORTH ADAMS STREET....PEORIA 1, ILLINOIS

"SEE YOU AT THE POLLS!"

"SEE YOU AT THE POLLS!"

"SEE YOU AT THE POLLS!"



Nobody knows for sure how it started—this line about "See you at the Polls!" we're hearing all over these days.

Best explanation seems to be that it came from that state candidate out west. . . . His opponent in a debate got all riled up and challenged him to fight it out in the alley.

But he said—"I'll settle this the AMERICAN way—I'll see you at the polls!" And the audience picked up the chant.

Now everybody's saying it—and on Nov. 4 everybody will be *doing* it!

"SEE YOU AT THE POLLS!"

"SEE YOU AT THE POLLS!"

Contributed in the public interest by **ENGINEERING NEWS-RECORD**

PUBLICATIONS

(*Continued from page 108*)

aid the user in determining the proper roller chain for any application. One 24-p section contains a comprehensive group of pre-selected drives available from stock. A section on stainless steel and bronze chains is included for installations that demand resistance to corrosion. Also discussed are factors such as shaft and sprocket wheel alignment, chain tensions, casing assemblies and methods of lubrication. LINK-BELT CO., 307 N. MICHIGAN AVENUE, CHICAGO 1, ILL.

Steeltex floor lath for steel and concrete joist construction—Floor lath is a combination form and reinforcement for concrete floors and roof slabs. This 12-page booklet called DM-133, contains data of interest to architects, designers, engineers and contractors. The booklet includes complete specifications, test data, tables of face loads, instructions on how to install the lath over steel joists and precast concrete joists, etc. Also included is a table of safe loads for laths from 2- to 3½-in. in thickness, and spans of 18 to 32 in. PITTSBURGH STEEL PRODUCTS CO., 1429 GRANT BUILDING, PITTSBURGH 30, PA.

Central control panel system—A new 8-page bulletin F-5265 outlines a technique for use in designing economical automatic electric control installation for heating and air-conditioning systems. Central control panel technique simplifies installation, reduces over-all costs, minimizes service, increases system flexibility and assists engineers in preparation of specification diagrams, according to the bulletin. Complete with schematic diagrams and wiring installation diagrams, it is available on request from BARBER-COLMAN COMPANY, ROCKFORD, ILL.

Open-grid bridge floors—What has been called the best solution in many years to combat hazardous driving on existing open-grid steel bridge floors is described in a new four-page folder. The solution is a new "Safe-Grip" surfacing machine developed and patented by Reliance Steel Products Co. The machine is leased by Reliance to contractors for state and county engineers, other municipal authorities, and public road and bridge officials for their use in applying a new non-skid surface to already-existing bridge floors. It operates on a 220-volt, 3-phase circuit, and moves on a track laid on the work surface. RELIANCE STEEL PRODUCTS CO., 3692 WALNUT STREET, MCKEESPORT, PA.

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Whose responsibility?

THE MOUNTING LIST of damage claims from property owners along the St. Mary's River in Michigan and Ontario serves to highlight the problems that are inherent in artificial stream regulation. That river forms the outlet of Lake Superior, now largely controlled by a series of 16 gates under jurisdiction of the International Joint Commission. Lake Superior, like all the other Great Lakes, is high because of abnormally heavy rainfall this year coming on top of what appears to be a long cyclical rise in those lakes. Widespread damage has been reported on all the lakes (ENR June 5, p 27), but efforts to place responsibility on anyone but Nature have not made much progress.

At Sault Ste. Marie the situation is different. There the level of water in the St. Mary's River is very obviously related to the number of gates that are open in the regulating weir. Several weeks ago, because of high levels in Lake Superior, 15 of the 16 gates were opened. The resulting rise in the river brought a storm of protest from local people and, as a consequence, some of the gates were closed. Yet if that closing results in a continued rise in Lake Superior, there will be trouble along the shores of that lake. High water will intensify damage to shore-front property and in harbors during fall and winter storms. Blame for this also will be placed on the regulatory commission.

Hence the commission is faced with a dilemma. Because of a natural development over which it has no control, any action, or lack of action, on its part will cause damage to someone. And the gain to the community at large resulting from the regulatory gates at the head of the St. Mary's River is of no significance to the damaged property owner.

A similar situation can develop in the operation of flood-control facilities, as was noted in the account of how the reservoirs on the Grand River in Oklahoma were operated during the 1951 flood (ENR Aug. 28, p. 39). There, no plan of operation could prevent some damage to someone. But the amount of flooding in one region could be reduced at the risk of causing more flooding in other areas. That was the gamble the reservoir operators had to take.

Which points to the need for a judicial or legislative determination of where responsibility for such damage lies—if there is responsibility. Certainly it does not rest on the agency appointed to operate the regulating dams or flood-control reservoirs, nor on the individual members who have to make the decisions. But whether it is a charge on the federal government or on the benefited region has never been clearly determined. The Flood-Control Act of 1936 (under which all flood-control projects such as the one on the Grand River have been built) states that local agencies must "hold and save the United States free from damage due to the construction works." However, no one knows whether that applies to the way these works are operated after they are built. There is even less certainty concerning damages due to the operation of control dams like the one at the outlet of Lake Superior. It is to be hoped that the damage suits that have been started may help to clean up this uncertainty.

The problem of human relations

BOTH INDUSTRY AND LABOR should give heed to the warning sounded by Benjamin F. Fairless at the time he received the John Fritz Medal at the Centennial of Engineering. Settlement of labor disputes by a government agency, said Mr. Fairless, can only end in government taking over industry, at which time labor will lose its right to strike.

In recent years, with a few notable exceptions, the whole trend in labor relations has been toward settlement of disputes by some government agency rather than by direct negotiations between employers and representatives of their employees. The increase in industry-wide bargaining, which is favored by labor leaders and many in industry because of the greater economic power given to the bargainers, has facilitated that trend. And the trend has been welcomed alike by labor leaders, because they generally get a favorable decision from a federal board, and by politicians, because they are deeply interested in the labor vote.

Under such conditions collective bargaining ceases to be real bargaining; it becomes a farce in which the appearance of bargaining is maintained until failure to reach agreement results in federal intervention in one form or another.

Construction is one of the few fields where a serious effort has been made to meet labor issues without resort to some governmental agency for a final decision. The National Joint Board for the settlement of jurisdictional disputes is an example. Another is the agreement by building trades in New York City to support demands for higher pay by evidence of increased production.

But the construction industry alone cannot check the trend noted by Mr. Fairless. There will be no real check until a similar approach to labor problems spreads to industries like steel and coal. And that probably will not come until labor leaders begin to realize the dangers of that trend, and how they could lose their real powers as they have done in the countries like Russia.

In the meantime industrial management and the public at large must regard the solution of labor disputes without work stoppage as America's most vital objective. For, as Mr. Fairless pointed out, the advantages of technological progress will be canceled unless the problem of human relations is solved.

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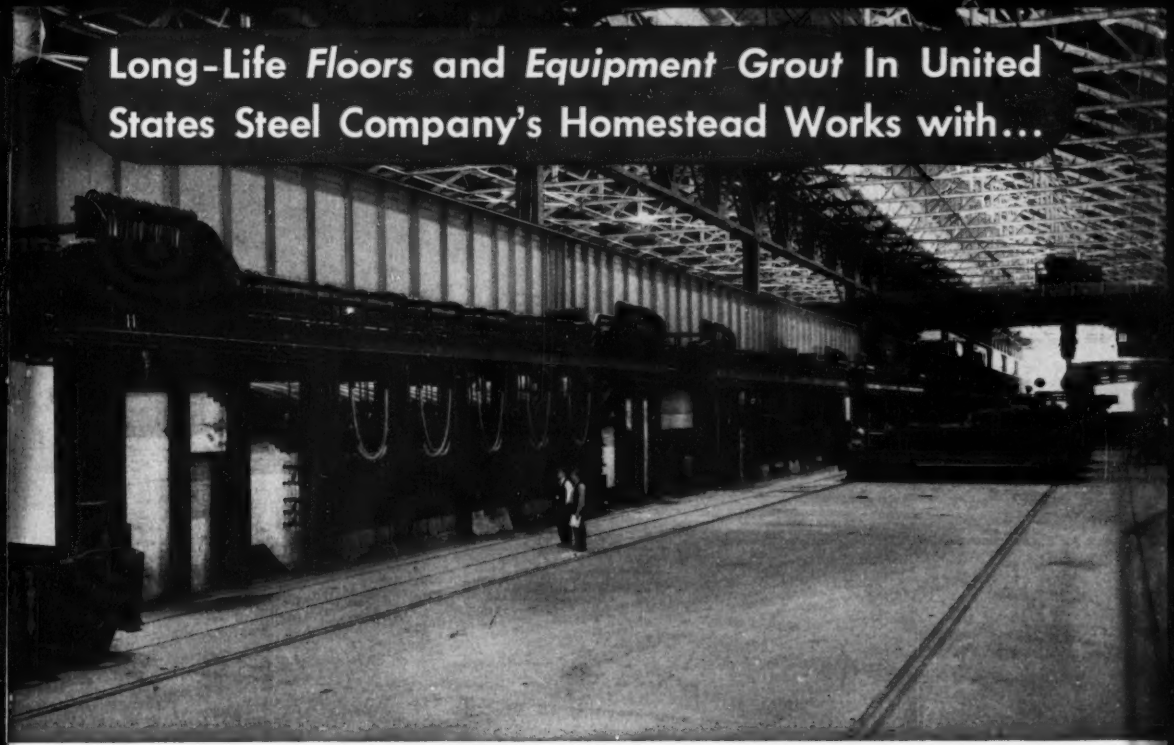

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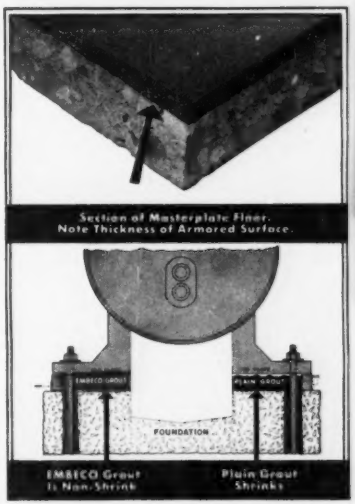

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